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## KALIDASA—HIS DATE AND BIRTH-PLACE—PART II

BY T. J. KEDAR, ESQ., B.A., LL.B.

### *The Date of Kālidāsa*

IN assigning Kālidāsa to the fourth or the fifth century A.D. greatest stress is laid on the reference in fourth canto of the *Raghuvamśa* to the conquest of the Huns by Raghu. It has been argued that Huns referred to were the White Huns who entered India after 455 A.D. and who had over-run Persia by 425 A.D. There is no reason to suppose that the reference in the stanza

तत्र हूणावरौ धानां भर्तृषु व्यक्तविक्रमम् ।

कपोलपाटलादेशि बभूव रघुचेष्टितम् ॥ (रघु. 4-68)

is to the white Huns. It is assumed that no Hun nation existed on the banks of Oxus River, or for that matter in Bactria in the first century B.C. If we succeed in establishing that the Huns dwelt on the banks of the Oxus and had formed themselves into a nation in the first century B.C., the result would greatly support our theory that Kālidāsa lived and flourished in the first century B.C.<sup>1</sup>

2. In describing the conquest of Raghu, Kālidāsa mentions that after finishing the conquests in the East and West of India, Raghu proceeded to conquer the countries to the North-West, North and North-East of India. First he set out for Persia.

पारसीकास्ततेजितुं प्रतस्थे स्थलवर्त्मना ।

इन्दियाख्यानिवरिपूस्तत्त्वज्ञानेन संयमी ॥ (रघु. 4-60)

It is expressly mentioned that he proceeded by land and not by sea. To do this, he was bound to cross the Indus somewhere on the border of India. It appears that in the first century B.C. and even before that period the boundaries of Persia and India were conterminous. After defeating the Pārasikas (Parsis), Raghu advanced towards a river about the identity of which there is some dispute. According to Mallināth, it is the river Indus. According to an earlier commentator, Vallabha, it is the river Vaṅkshu or Vaṅku identified with the river Oxus.

विनीताश्वभ्रमास्तस्य सिन्धु (or वङ्गु) तीरविचेष्टनैः ।

पुण्ड्रवर्षाजिनः स्कन्धांल्लभकुङ्कुमकेसरान् ॥ (रघु. 4-67)

<sup>1</sup> "Kālidāsa—His Birth-place and Date," *Nagpur University Journal*, No. 5, Dec. 1939.

We have to see which of the two readings is correct. This has to be determined with reference to the next stanza:

तत्र हूणावरोधानां भर्तृषुव्यक्तविक्रमम् etc.

Vallabha reads Vaṅku for Sindhu. "On the banks of the river the heroism of Raghu was writ large on the cheeks of the wives of Huns in the form of rosiness caused by self-striking owing to grief at the death of their husbands." Can this description apply to the Indus? If in going to the country of the Pārasikas (Parsis), the Indus had to be crossed, there is no reason why the Indus should be mentioned after conquering the Pārasikas. It is mentioned in the preceding stanza that Raghu advanced to the North after conquering the Pārasikas.

ततः प्रतस्थे कौवेरी मास्वानिव रघुर्दिशम् ।

शरैरस्त्रैरिषोदीच्यानुद्धरिष्यन् रसानिव ॥ (रघु. 4-66)

"Raghu then advanced to the North just as the Sun does."

From Persia or Kerman, the easternmost district of Persia, if he advances to the North, Raghu would necessarily avoid the Indus and go to the Oxus. The river Oxus was known to the Indian World, long before Kālidāsa flourished. The territory on the banks of the Oxus was known as the *Bālhika*, and which is identical with modern Balkha.

The question is whether the Huns had settled down on the banks of the Oxus in the first century B.C. It has been supposed by Indologists that the Huns settled down on the banks of the Oxus in the fourth or the fifth century A.D. and consequently, Kālidāsa could not have been born in the first century B.C. Professor K. B. Pathak quotes Kshiraswami, the Commentator of *Amarakośa*, who explains Vāhlika as meaning saffron:

बाल्हीकदेशजं यद्रथोरुत्तरदिग्विजये ।

दुधुवर्बाजिनःस्कन्धोल्लभकुङ्कुमकेसरान् ॥

According to Mr. Pathak, the reading सिन्धुतीर must be abandoned.<sup>2</sup> Kshiraswami lived in the eleventh century A.D. whereas Mallinātha, a southerner, whose geographical knowledge is unquestionably defective, and who lived in the 14th century A.D., could not be relied on for the correct reading. Vallabha, another commentator, flourished in the 12th century A.D. and his reading is बङ्गूतीरविचेष्टनैः.

Mr. Pathak accepts the reading of Vallabha and then quotes Cunningham: "According to the Chinese Authorities, the White Huns first

<sup>2</sup> *Indian Antiquary*, Nov. 1912.

appeared in the countries on the Oxus in the beginning of the fifth century A.D."<sup>3</sup> Vincent Smith also says that the Huns were in the Oxus Valley between A.D. 455-84.<sup>4</sup>

These scholars have not been careful to distinguish between the Mongolian Huns and the Epthalites or the White Huns and have thus created a confusion leading to wrong inferences. Researches based on Chinese Chronicles, particularly of the first Han dynasty (206 B.C. to 24 A.D.) establish that the "Great Yuechi" people invaded Bactria or the Bāhlikas in the second century B.C. As Sir Aurel Stein says "Originally, so the text asserts, the Great Yuechi lived a nomad life beyond the North-Western frontiers of China. With their flocks they moved hither and thither over those vast tracts like their neighbours, the hordes of the Hiung-nu. In 201 B.C. and again in 165 B.C., they were attacked by the same powerful Hiung-nu the Huns of later days. On the last occasion their king was slain and his skull turned into a drinking bowl and the Yuechi themselves, driven to forsake their camping grounds, wandered far to the west."<sup>5</sup> Here, after a victory over the Ta-hia, the nation occupying Bactria, the great Yuechi settled down in the tracts North of the Oxus. Sir Aurel Stein mentions further in this article that the Yuechi crossed the Oxus sometime after 126 B.C. and made themselves the masters of the Tahia Capital, South of the river. The territory they secured was bounded on the West by the Asir or the kingdom of the Arsacidæ and on the South by Kipin—that is upper Kabul Valley.

Sir Aurel Stein, who devoted his whole life to the study of Central Asia, elsewhere<sup>6</sup> writes that the tribe of the Hiung-nu or the Huns resided on the side of Mongolia. As they were a constant source of danger to China, the great Chinese Emperor conquered the Northern slopes of the Nanshan range (140-87 B.C.). These slopes had been occupied at first by the Great Yuechi people who had been ousted from their seats by the Hiung-nu. The Yuechi then went towards the kingdom of Bactria and settled on the banks of the Oxus. By 121 B.C. the Hiung-nu or the Huns were dislodged from the northern slopes of the Nanshan range and the whole of the Tarim basin which comprises Yarkand and the surrounding countries came under the sway of the Chinese by 115 B.C.

The Hiung-nu or Huns too, in their turn migrated to the West and settled on the northern slopes of the Tien-Shan range believed to be श्वेतपर्वत

<sup>3</sup> *Transactions of the 9th Congress of the Orientalists.*

<sup>4</sup> *Early History of India*, p. 297.

<sup>5</sup> *Indian Antiquary*, April 1905.

<sup>6</sup> *Ancient Central Asian Tracts*, 1932, p. 16 ff.



of Indian Mythology. It was at this period that the Great Wall of China was built to protect the Chinese Empire from the depredations of the Huns. It appears that the Huns continued their attacks on the territory to the South of the Tien-Shan range.

Sir Percy Sykes also observes, "Reference has already been made to the Yuechi as having in 163 B.C. dispossessed the Sakas from their habitat in the Tarim Basin. In 120 B.C. the Yuechi drove the Sakas out of Bactria, which they occupied and which remained their centre for many generations. In 30 B.C. one of their tribes the Kwei-Shang subdued the others and the nation became known to the Romans as the 'Kushan'".<sup>7</sup>

The Hiung-nu who later were known as Huns were at first nomad tribes, but before 200 B.C. had formed themselves into a confederacy and claimed equality with the Chinese. As E. H. Parker in his book "*China, her History, Diplomacy and Commerce*" says: "The whole history of Hiung-nu wars of the Han dynasty is intensely vivid and interesting yielding not one whit in any respect to the Greek accounts of the Scythians and the Huns in the respective times of Alexander and Attila. There is excellent ground for believing that the Scythians, Huns and Hiung-nu were practically re-shuffles of one and the same people—the Turks of later date."

It appears that three nomad tribes lived before the Christian era commenced in Central Asia as close neighbours. The Sakas occupied the Tarim basin. They were the first to leave their seats and occupied Bactria. They were followed by Yuechi, who pushed the Sakas further west and south. The Yue-chi in their turn, were driven out from their settlements by the Hiung-nu. By close proximity and similarity of customs and manners, they appear to be branches of the same stock, and to the people of the ancient world they were all at first Huns and later on Turks or Turushkas.

Stuart describes, how in 124 B.C. Artabanus II, the uncle of the Persian King, died from a wound taken while fighting the Yue-chi "who driven forward by the Huns (Hiung-nu) had recently driven the Greco-Bactrian kingdom back into India."<sup>8</sup> It is at this time (124 B.C.) that we find the Sakas establishing themselves in the north of the Drangian and giving the country the name of Sakastan (now Sajistan).

Latourette, another author, in his book "*The Chinese—Their History and Culture*" remarks, "In the North-west, Shih Huangti's forces defeated the Hiung-nu, a pastoral horse-using people, probably akin to the Tartars

<sup>7</sup> *History of Persia*, 1930 ed., Vol. I, p. 433.

<sup>8</sup> *Ancient Persian and Iranian Civilisation*.

and Turks and possibly the same as or related to the Huns of European History. For several centuries we hear much of them in the Chinese annals. About the time of Shih Huangti—in the second half of the third century B.C.—the Hiung-nu seem for the first time to have been welded into an effective confederation."

Mr. Vincent Smith also says "A tribe of Turki nomads, known to Chinese authors as the Hiung-nu succeeded in inflicting upon a neighbouring and a rival horde of the same stock, a decisive defeat before the middle of the second century B.C. The date of the event is stated as 165 B.C. by most scholars while Dr. Flanke gives the limiting dates as 174 and 160 B.C." He further observes that the Yue-chi had to move in the first century B.C. to the south of Oxus, being forced to do so by the Hiung-nu, and became the over-lords of the inhabitants of Bactria known as ta-hia to the Chinese.<sup>9</sup> "The Yue-chis were not snub-nosed Mongols, but being men with pink complexions and large noses resembling the Hiung-nu in manners and customs."<sup>10</sup>

It is clear from the authorities quoted above that the Yue-chi who resembled the Hiung-nu and who were believed to belong to the same stock as the latter had been occupying the valley of the Oxus in the first century B.C. The Hiung-nu themselves were then occupying territories to the north of the Oxus. To outsiders, both the branches of the Nomadic stock were known as Huns and the description of the Great Yue-chi as Huns would not be inappropriate. The Yue-chi were on the south bank of the Oxus and the Hiung-nu on the north bank and the description of Kālidāsa that Raghu fought with the Huns and defeated them on the banks of the Oxus would suggest that he had the background of the first century B.C.

The White Huns or the Epthalites came from a stock known to the Chinese as the Yetha. Sir Percy Sykes says, "The new comers (Epthalites), though of a similar stock were entirely distinct from the Yue-chi whom they drove out. This powerful tribe crossed the Oxus about A.D. 425, and according to the Persian Chroniclers the news of their invasion caused widespread panic."<sup>11</sup> According to Mr. Vincent Smith, these Huns entered India in 455 A.D. and again in 465 A.D. Skandagupta had ascended the throne in 455 A.D. and had to witness a third raid by these Huns in 470 A.D.

It is clear that the White Huns had no settlement on the Oxus during the reigns of Gupta kings, Candragupta II, Kumārgupta and Skandagupta.

<sup>9</sup> *Early History of India*, 1924 ed., p. 265.

<sup>10</sup> Kingsmill, *J.R.H.S.*, 1882, p. 7.

<sup>11</sup> *History of Persia*, Vol. I, p. 433, 1930 ed.

Kālidāsa could not have referred to them even if we assume that he lived and flourished during the Gupta period. His reference is evidently to the Yue-chi people and probably the Hiung-nu. It should be noted that Candragupta II reigned from 380 A.D. to 415 A.D. and Kumārgupta from 415 A.D. to 455 A.D.

If Kālidāsa was a contemporary of Candragupta II, the existence of the White Huns who had not come out of the steppes beyond the Tianshan mountains before 425 A.D. could not have been known to him. And when they actually crossed the Oxus in 425 A.D. they marched first into Persia and at a later date namely 455 A.D. into India. Kālidāsa was referring unquestionably to the settled Bāhlika country which was ruled over in the first century B.C. by the Great Yue-chi who had become a nation at that time. The conquest of Raghu was directed against settled territories, as all such conquests would be and not against nomadic or pastoral tribes who were at one place on one day and at another place on another day. So between 425 A.D. and 470 A.D. or thereabout the White Huns had not formed themselves into a nation and it is a mistake to suppose that the reference in the fourth canto of *Raghuvamśa* was to the White Huns. The Yue-chi people after forming themselves into a nation and ruling over Bactria in the first century B.C. moved southwards towards India and established kingdoms in the North-West of India. The first Yue-chi king who has received historic prominence is Kadphises I and his accession has been dated 40 A.D. by Mr. Vincent Smith. Kadphises made himself master of Kipin or Gāndhāra as well as Kabul. He consolidated his power in Bactria. At the age of 80, Kadphises' reign ended and this was in or about 77 or 78 A.D., and his son Kadphises II further extended the Yue-chi dominion and completed the conquest of Northern India. Kanishka succeeded Kadphises II, it is believed in 120 A.D.<sup>12</sup>

Kanishka, Vasishka and Huvisksa were well established in power at Mathura on the Jumna as well as in Kashmir and in the intermediate Punjab. The rule of Kanishka is stated to have extended as far South as the Vindhya and also over the remote regions beyond the Pamir passes. Kanishka's capital was Purushpur, the modern Peshawar. His most striking military exploit was his conquest of Kashagar, Yarkand and Khotan. Kanishka was succeeded by other Kushan kings, the last king of some importance being Vasudeo whose rule terminated by 240 A.D. The Kushans held their own in Kabul and Punjab for a long time after 240 A.D. though they lost some of their dominions in India. The Kushan kings of Kabul

<sup>12</sup> See Vincent Smith, *Early History of India*, p. 273.

continued to be a considerable power until the fifth century A.D. when they were overthrown by the White Huns.

If the Kushans who were descended from the Yue-chi had been reigning at Kabul, which was practically the gate of India in the fifth century, there was no reason to place the Huns at the banks of the Oxus or Vanku. The Yue-chi people were the Huns and they migrated towards India only in the beginning of the first century A.D. If we accept the theory propounded in my previous article,<sup>13</sup> namely that Kālidāsa lived and flourished in the first century B.C. the Yue-chi people were then still on the banks of the Oxus; were rulers of Bactria or Bāhlika and the description of Kālidāsa that Huns dwelt on the banks of the Oxus is in accordance with historical facts.

The next point urged in support of the theory of the fifth century A.D. as to the date of Kālidāsa is the description of the conquests of Raghu. It is urged that the description proceeds on the lines of Samudragupta's conquests. Does this mean that there were no campaigns of conquest before Samudragupta? In the *Mahābhārata* itself, we find elaborate descriptions of conquests made by the Pāṇḍava brothers before the holding of the Rājasūya sacrifice. The Rājasūya sacrifice was designed for the conquest of the earth. No king could become a *samrāt* (an emperor) unless he conquered the earth or a substantial portion of it. So in describing the conquests of Raghu, Kālidāsa had not to depend on the conquests of Samudragupta.

Moreover, the conquests of Samudragupta do not include a conquest of the Persians or the Huns on the banks of the Oxus. Neither is there any mention of the defeat of such a race as the Kāmbojas who dwelt beyond the then North-western frontier of India. There is no mention, either of the victory over the king of the Pāṇḍyas in the south. The *Mahābhārata* on the other hand describes how Arjuna the great Pāṇḍava hero conquered the countries now comprised in Kāshmir and trans-Kāshmir tracts (see सभापर्व, अध्याय २४)

ततः काश्मीरकान् धीरान् क्षत्रियान् क्षत्रियर्षभः ।

व्यजयल्लोहितं चैव मण्डलैर्दशभिस्सह ॥

ततस्त्रिगतान् कौन्तेयो दार्षिकानथर्ककणान् ।

क्षत्रियान् सुबहून् राजन्नुपावर्तत सर्वशः ॥

अभिसारी ततो रम्यां विजिग्ये कुरुनन्दनः ।

उरगावासिनं चैव रोचमानं रणेऽजयत् ॥

अभिसारी was a city belonging to the tribe of Abhisāras in Kāshmir as is clear from Kalhaṇa's *Rājatarangīṇi*. I think उरगा is a wrong reading for उरसा

<sup>13</sup> Nagpur University Journal, No. 5, 1939.

which was another city in Kashmir. After conquering the whole of Kāshmir, Arjuna proceeded to Bactria or Bāhlika.

ततः परम विक्रान्तो बाल्हीकान् पाकशासनिः ।

महता परिमर्देन वशं चक्रे दुरासदान् ॥

This conquest must have brought him on the banks of the Oxus. After Bāhlikas, Daradas were conquered along with Kāmbojas.

दरदान् सहकाम्बोजैरजयन् पाकशासनिः ।

The Indologists do not agree about the location of the Kāmbojas. The Daradas are assigned to the slopes of the Hindukush. According to Mr. Vincent Smith, the Kāmbojas occupied a territory which is a part of the modern Tibet. But the description of the Kāmbojas in the Purāṇas shows that they occupied a tract contiguous to that held by the Daradas. The description in the *Mahābhārata* quoted above couples the Daradas with the Kāmbojas and it appears that the Kāmbojas were a tribe dwelling on the slopes of the Hindukush. In the *Manusmṛiti* (chapter 10, stanza 44), the Kāmbojas are placed side by side with Yavanas (Greeks) and Sakas (the Scythians). The Yavanas and Sakas were unquestionably beyond the North-western frontier of India and if the route followed by Raghu be carefully considered, the inference becomes irresistible that from the banks of the Oxus, Raghu would descend on the slopes of the Hindukush. The conquests of Arjuna were pushed further northwards and were carried as far as the श्वेतपर्वत (the Tien-shan mountains) and included such races as the Lohas, Parama-kāmbojas and the Rishikas. Mention is made of the country of Uttarkurus which is beyond the श्वेतपर्वत, which also submitted to the arms of the Pāṇḍava hero. If Kālidāsa had desired to describe the conquests of Raghu beyond the frontiers of India, he would naturally take his guidance from the *Mahābhārata* and not from Samudragupta who never went beyond the frontiers of India in his fighting campaign. It is worth while to note that Arrian, the historian of Alexander the Great, mentions Cambistholi to the North-west of India. This refers to the dwellers in Kamb or Kambis country.

It is thus highly improbable to hold that Kālidāsa got his inspiration for the description of the conquests of Raghu from the conquests of Samudragupta. There is nothing in the recorded *Exploits of Samudragupta* to indicate that the conquests of Samudragupta were before the mind of Kālidāsa when he wrote the description of Raghu's conquests. The scholars who rely on the fifth century A.D. theory assume in the first instance that Kālidāsa was a contemporary of Candragupta II and corroborate the assumption by

another unwarranted assumption that the description of the conquests of Raghu was influenced by the conquests of Samudragupta.

The description of the *Swayamvara* (marriage) of Indumati next attracts our attention in our search for the date of Kālidāsa. Kālidāsa mentions the presence of kings of eight countries: Magadha, Aṅga, Āvanti, Anūpa, Śūrsena, Kalinga, Pāṇḍya and Kośala. Kālidāsa has shown high regard for the king of Magadha. Indumati, the bride, rejects the king and moves on towards another king with a respectful bow

ऋजुप्रणामं कियेयैव तन्वी प्रत्यादिदेशेनमभाषमाणा । (रघु. 6-25)

This she did only to this king and to no other king whom she rejected. Now if it be assumed that Kālidāsa had before his mind the conditions of his time, and if it be further assumed that Candragupta II or Kumārgupta was the then reigning monarch of Magadha, it would not have been possible for him to introduce another king as king of Ujjain. It is clear from the description that Ujjain had also a king who in all probability had an independent status. The description gives rise to two inferences—either that Kālidāsa was giving an imaginary picture that applied according to him to the times of Raghu or that he referred to his own times in which both Ujjain and Magadha had independent kings. In the first case, the inference is immaterial for both theories, viz., of the first century B.C. and the fifth century A.D. In the latter case, the time of the Guptas is clearly ruled out for the Lord of Magadha was the Lord of Avanti (Ujjain) and the mention of two different kings for these two places would be out of place. If Kālidāsa wrote *Raghuvamśa* in the Gupta period, it must have been after 455 A.D. when the White Huns left the Oxus basin and invaded India. At that time there was no king at Ujjain which had already been subjugated by Candragupta II between 380 A.D. and 415 A.D. On the other hand, if we place Kālidāsa in the first century B.C., and assign *Raghuvamśa* to a period after the death of Devabhūti that is after 73 B.C., Magadha was ruled by the Kaṇva king Vāsudeva, who had killed Devabhūti and occupied the throne of Pāṭaliputra. Kaṇva Vāsudeva was a Brahmin and the respectful bow which is referred to in the line quoted above is understandable. It would behove a Kṣatriya princess to take the course she did in rejecting the king and moving on towards another prince. Avanti or Ujjain was then an independent kingdom under the Gardabhilla dynasty and was the headquarters of what was known as the western Maḷawa. It has been mentioned before, that a short time before 57 B.C., the King Gardabhilla, who was the predecessor of Vikramāditya (Śākari), had been driven away from his kingdom by Śakas who had invaded Ujjain which was regained by Vikramāditya

from the Śakas in or about 57 B.C. If we place the composition of *Raghuvamśa* sometime between 73 B.C. which marks the end of the rule of the dissolute king Devabhūti and 57 B.C. the date of the triumph of Vikramāditya there is a period between these dates, in which Āvantī was ruled by a Śaka king (or a Satrap). In my opinion, the following description refers to the Śaka king.

अवन्तिनाथोऽयमुदग्रबाहुर्विशालवक्षास्तनुवृत्तमध्यः ।

आरोप्यचक्रध्रममुष्णतेजस्त्वष्ट्रेव यन्नोल्लिखितोविभाति ॥ (रघु. 6-32)

“This is the king of Āvantī having stout and large arms, an expansive chest and a slim rounded waist who (therefore) looks like the Sun carefully trimmed by Twaṣṭri by being placed on a turning lathe.” The Śakas were regarded as Kṣatriyas in those days and it is an undisputed historical fact that many of them and other foreigners had adopted the Hindu faith. The *Garuḍa Stambha* of Heleodorus at Besnagar of the first century B.C. is a standing proof of this fact. The simile used by Kālidāsa in the above-quoted stanza is eminently suggestive of the Śaka origin of this king. The king is compared to the Sun whose disc was cut out by his father-in-law the Twaṣṭri and the story goes according to the *Mārkaṇḍeya Purāṇa* that Twaṣṭri performed this operation on the Sun in Śaka-Dwīpa. Mallinātha also refers to his story in his commentary as follows:

विश्वकर्मात्वनुज्ञातः शाकद्वीपे विवस्वता ।

ध्रममारोप्य तत्तेजः शातनायोपचक्रमे ॥

The Śakas were handsome people and the features could be well attributed to chiselling carefully done by the divine architect (यन्नोल्लिखित). Then the rounded slim waist is a marked feature of the Śakas and the Greeks and would be in marked contrast with the stout waists of the Indian princes. On no other theory can we account for the simile used by Kālidāsa and if Kālidāsa lived in the first century B.C., and composed *Raghuvamśa* in the period of the Śaka rule at Ujjain between 73 B.C. and 57 B.C. the description would be perfectly accurate. I have already mentioned that *Raghuvamśa* ends abruptly with the death of a king who was a prototype of the last Śunga king Devabhūti and since the first dramatic creation of Kālidāsa portrayed the life of one who was for practical purposes the first king of the Śunga dynasty (Agnimitra), it is reasonable to hold that the abrupt ending of *Raghuvamśa* is suggestive of the end of the Śunga rule and for that reason, the composition of *Raghuvamśa* must be assigned to a date some time after 73 B.C. There was a revolution at Ujjain between 73 B.C. and 57 B.C. and Ujjain was for sometime under the sway of the Śakas and

when Kālidāsa refers to the king of Ujjain, he does it with respect to the Śaka prince who was ruling over Ujjain at the time.

According to *Matsya*, *Vāyu* and *Viṣṇu Purāṇas* a dynasty called the Gardabhilla dynasty ruled over Ujjain. Gandhavasena is supposed to be the founder of it. He ascended the throne in or about 74 B.C. when the Śunga rule had come to an end. Gandhavasena ruled for 10 years up to 64 B.C. In the latter year, according to Jain books, Saraswatī, the sister of Kālikasūri, a Jain ascetic, was seized by the king and placed in his harem. Kālikasūri then, in despair, crossed the Indus and sought the help of the Śakas in Seistan. The Śakas advanced on Ujjain and drove out Gandhavasena. They ruled over Ujjain for seven years from 64 B.C. to 57 B.C. In addition to the Jain sources from which this account has been taken, the *Yugapurāṇa* which has been appended to *Gargasamhitā* also mentions these details. Dr. Jayaswal in his article published in the *Journal of Bihar and Orissa Research Society* (1928) has also thrown light on this. King Vikramāditya (Śakāri) was a son of Gandhavasena. Helped by the Āndhra King, Vikramāditya invaded Ujjain and drove out the Śakas and this event took place in 57 B.C. In the Jain book *Kumārachhanda*, the first Vikramāditya is said to appear 3020 years after the commencement of Kaliyuga.<sup>14</sup> According to the orthodox belief Kaliyuga began in 3102 B.C. and so deducting 3020 years from 3102 B.C., we come to the year 81 B.C. Vikramāditya's victory over the Śakas took place in 57 B.C. so that we can safely take it that he was 24 years old at the time. It is not reasonable to doubt the testimony of Jain works and when the Hindu Purāṇas also partially corroborate them, the inference is irresistible that Vikramāditya was not a mythical hero but a sovereign who lived and ruled over Ujjain in the first century B.C. The available versions of the *Bṛihat-kathā* of Guṇāḍhya mention king Vikramāditya of Ujjain and the date of *Bṛihat-kathā* is taken to be first century A.D. In the stanza from *Raghuvamśa* quoted above, there is an unmistakable reference to a Śaka King as the Lord of Āvantī, and as has been pointed out, the period of Śaka rule falls between 64 B.C. and 57 B.C. and this fits in with our theory that the *Raghuvamśa* was composed after the death of the last Śunga king Devabhūti that is after 73 B.C. Since the Śakas ruled between 64 B.C. and 57 B.C. we can safely place its composition between these two dates.

Next we come to the king of the Pāṇḍyas. In the fourth canto of *Raghuvamśa*, Raghu is said to have conquered the Kalingas and proceeded to the South. He crossed the Kāveri and conquered the Pāṇḍyas. In the

<sup>14</sup> T. Shah, *Ancient India*, Vol. 3, p. 370.



6th canto, Kālidāsa describes the Pāṇḍya king as the lord of the city called Uragapura. It is significant to note that neither in the 4th canto nor in the 6th canto, mention is made of the Chola kingdom. It appears that in Kālidāsa's time all the territory south of the Kalingas was known as the Pāṇḍya country with its capital at Uragapura.

According to Mr. Vincent Smith the Pāṇḍya kingdom was approximately equivalent to the modern Madurai and Tinnevely districts with part of Trichinopoly and sometimes, also of Travancore.<sup>15</sup> In the first century after Christ, Madura or Kudal was according to Pliny, the capital of the Pāṇḍyas. The Pāṇḍyas were known to the Sanskrit grammarian Kātyāyana whose date is not later than the fourth century B.C. In the same century, Magasthenes the ambassador of Seluekas Nekator at the court of Candragupta Maurya was told strange tales about the realm of the Pāṇḍyas. Strabo mentions a mission sent by 'King Pandion' to Augustus Cæsar in 20 B.C. Ptolemy the Geographer (A.D. 140) was well informed concerning the names and positions of the marts and ports of the Pāṇḍya country. To the north of the Pāṇḍya country was the Chola kingdom which was bounded on the north by the Pennar river and on the south by the Southern Vettarū river. Uraiyur was the most ancient historical capital of this country. According to Mr. Vincent Smith, the first historical or semi-historical Chola king is Karikal who is said to have founded the city of Kaveripaddanam, transferring his capital from Uraiyur to the new city.<sup>16</sup> Karikal appears to have lived in the second half of the first century of the Christian era or perhaps in the second century.

As Mr. Vincent Smith says, "Literary references indicate that in the second or third century after Christ, the power of the Chola and other Tamil kings declined and was superseded by the rise of the Aruwalur and similar tribes apparently distinct in race from the Tamils. The earliest known Pallava inscription dating from about the beginning of the fourth century show that at that time a Pallava prince was reigning at Kañchi in the middle of the traditional Chola country. . . . However that may be, a Pallava king certainly was established at Kañchi, when Samudragupta raided the south about 350 A.D. and Chola dominions at that time must have been much diminished in consequence."<sup>17</sup> It is clear that Kañchi was a flourishing town in the fourth century A.D. and the seat of a Pallava king who was practically the ruler of the kingdom of the Cholas. Uraiyur which is the same

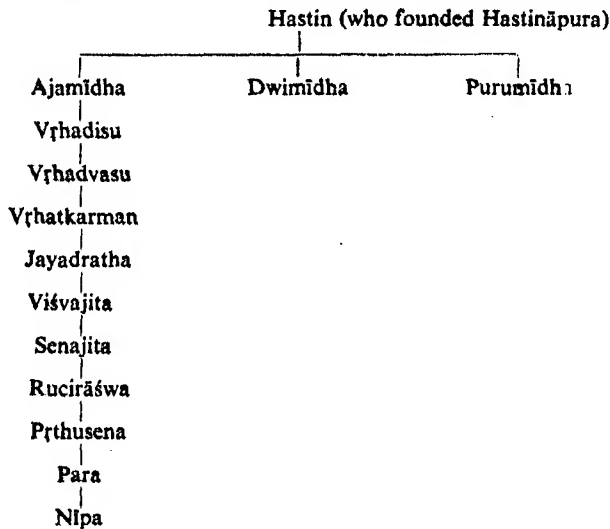
<sup>15</sup> *Early History of India*, p. 468.

<sup>16</sup> *Ibid.*, p. 481.

<sup>17</sup> *Ibid.*, p. 482.

as Urāgapur (being Prākṛita Apabhṛamsa) described by Kālidāsa was not the capital of the Pāṇḍyas in the time of the Guptas. Madura was the capital in those days, Urāgapur having been abandoned three centuries before. If what Mr. Vincent Smith says is correct about Urāgapur it conflicts with his assumption that Kālidāsa lived in the fourth or fifth century A.D.

The description of the king of Mathurā in canto 6 of *Raghuvamśa* also attracts our attention. The king is said to belong to the Nīpa family. The Nīpas are mentioned in the Purāṇas as having descended from the Puru family. In the *Viṣṇu Purāṇa*, the genealogy is given as below:



It is said further that Nīpa had hundred sons and one Ugrāyudha eventually destroyed the Nīpa race of Kṣatriyas. One thing is clear that about the time of Kālidāsa, there was no foreign ruler over Mathurā which was under the sway of a king of the Nīpa family, of course on the assumption that Kālidāsa was referring to contemporaneous events.

Mathurā was under the Śaka satraps for several centuries and the earliest date for the commencement of the Śaka rule can be placed about 30 B.C. The inscriptions of the lion capital at Mathurā place the rule of Rajubula and Sodas the Saka satraps by 30 B.C. No king of ancient dynasty ruled over Mathurā in the fourth or fifth century A.D.; the possibility in that behalf is only in regard to the period prior to 30 B.C. If Kālidāsa had events of his time before his mind, and if he lived in Gupta times, it was impossible for him to think of a king of Nīpa dynasty. On the other hand if he had composed *Raghuvamśa* between 64 B.C. and 57 B.C. or for that

matter in any year before 57 B.C., the existence of the rule of any indigenous sovereign over Mathurā is a certainty. Stanza 45 of the 6th canto mentions that the King of Mathurā was a veritable light of two families.

सा शूरसेनाधिपतिं सुषेणमुद्दिश्य लोकान्तरगीतकीर्तिम् ।

आचारशुद्धोभयवंशदीपं शुद्धान्तरक्षया जगदे कुमारी ॥

Evidently the two families mean the father's family and the mother's family. The description that the king was descended from the Nīpa family proves the high birth from the father's side. But what about the mother's side? This suggests that a contemporary king was in the mind of Kālidāsa when he wrote this stanza. No critic has thrown any light on this matter and consequently we have to see if the reigning monarch at Mathurā at the time of Kālidāsa had an equally high pedigree on the mother's side.

The Purāṇas describe that after Hastināpura was destroyed by the floods of the Ganges, the capital was removed to Kauśāmbi which became known as the capital of the Vatsa Desha. The inscription at Pabhosa (Prabhāsa) near the modern Kosam (which is the same as Kauśāmbi) records that the cave there was excavated during the reign of the king Ordruk or Antaka the fifth king of Śe thunga dynasty, a few years before Bhagabhadra. The donor was one Āṣāḍhasena, the maternal uncle of Bahasatimitra, a feudatory king then reigning at Kauśāmbi. There is another inscription discovered at Mora which records that the daughter of Bahasatimitra was the wife of the king of Mathurā and the mother of living sons.<sup>18</sup> These inscriptions give us a very important clue. If the monarch reigning at Mathurā in the time of Kālidāsa was an offspring of that marriage, the description in the above quoted stanza would be appropriate. The reigning monarch would be regarded as a lamp of both the families. On the father's side, he descended from the ancient family of the Nīpas and on the mother's side from the family of the Vatsas.

The inference is very clear from the above data that if contemporaneous events were before the mind of Kālidāsa, Mathurā was ruled over by an indigenous dynasty before 57 B.C. and Kālidāsa obviously referred to it. After the establishment of Śaka rule about 30 B.C., there was no indigenous ruler over Mathurā, until the Śaka rule was finally terminated by the Gupta Emperors.

If we, however, assume that the description of the conquest of Raghu and the marriage of Indumatī had no reference to contemporaneous events

<sup>18</sup> J.R.A.S., 1912, p. 120.

but on the contrary, was an excursion of poetic imagination, neither the first century B.C. theory nor the fifth century A.D. has any *locus standi*. But if it is necessary to refer the description to contemporaneous events, the inference must be in favour of the first century B.C. theory. The Pārasikas, the Huns, the Kāmbojas and the Pāṇdyas were not imaginary beings. The Vaṅku river, Uragapura and Tāmraparni are not fictitious names. A Śaka king at Ujjain and a King of ancient dynasty at Mathurā are not poetic creations. These data unmistakably establish that Kālidāsa had contemporaneous history and facts before his mind when he composed the *Raghuvamśa*. It follows from the above discussion that the only period which can account for all these facts is the first century B.C. It is impossible to explain them on the fourth or fifth century A.D. theory which must, therefore, be rejected.

I summarise my conclusions as follows :

(1) The Huns referred to by Kālidāsa in the *Raghuvamśa* were a nation which existed on the banks of the Oxus in the first century B.C.

(2) The White Huns had not settled down on the banks of the Oxus before 455 A.D., and consequently Kālidāsa could not have referred to them if we assume that he was a contemporary of Candragupta II.

(3) It is incorrect to say that the description of the conquests of Raghu was influenced by the conquests of Samudragupta.

(4) The description of the kings of Āvantī, Mathurā and Uragapura (Pāṇdyas) fits in with the state of things obtaining in the first century B.C. and not in the fourth or fifth century A.D.

It has been mentioned before that Vikramāditya (Śakāri) was not an imaginary person. Numerous legends have gathered round his name and have continued to be in existence for the last 2000 years in all parts of India. *Kathāsaritsāgara* of Sōmadeva describes some of the exploits of the King. The *Veṭāla Pañcavimśati*, the *Simhāsana-Dwātimśikā* and other stories have regaled the Indian world for several centuries. An era called 'Vikrama Samvat' is even now held in high esteem and is universally believed to have started in 57 or 58 B.C. It is impossible to believe that Vikramāditya (Śakāri) could be a wholly fictitious name. The description of the king and the Gardabhilla dynasty to which he belonged has been mainly derived from Jain sources particularly, the *Kalikācārya Kathānaka* to which reference<sup>19</sup> has been already made. Even Professor Rapson considers

<sup>19</sup> *Cambridge History of India*, Vol. I, p. 523.

that the historical setting of the *Kalikaçārya Kathanaka* is not inconsistent with what is known of the political circumstances of Ujjain of this period.

Moreover, the Gardabhilla dynasty has not escaped mention in the Hindu Purāṇas. *Matsya Purāṇa* mentions the Gardabhillas:

सप्तैवान्द्रा भविष्यन्ति दशाभीरास्तथानृपाः ।

सप्तगर्दभिष्ठाश्चापि शकाश्चाष्टादशैवतु ॥ प्र. २७३ ॥

“There will be seven Āndhra Kings; 10 Ābhīra Kings, 7 Gardabhilla Kings and 18 Śaka Kings.”

In verse 20 again there is reference to the Gardabhillas

यवनाष्टौ भविष्यन्ति सप्ताशीति महीमिमाम् ।

सप्तगर्दभिष्ठाभूयो भोक्ष्यन्तीमां वसुंधराम् ॥

“There will be 8 Yavana Kings. They will rule for 87 years. There will be again 7 Gardabhilla Kings who will enjoy the earth.”

The text of the *Matsya Purāṇa* seems to be a highly garbled one. The expression सप्ताशीति seems to be a wrong reading. The word भूयः (again) in the second line suggests an interruption in the dynasty and the reference to the eight Yavana (Greek) Kings in the first line may properly include them in the period of interruption. This period of interruption according to Jain sources extends over 7 years. According to the chronology presented by Tribhuwandas Shah in Vol. 3 of his work *Ancient India* (p. 332), the result is as follows:

“Gardabhilla Dynasty Gandharvasena *alias* Darpana

74 B.C. to 64 B.C.	..	..	..	10 years
Interrugnum, Śaka Kings, 64 B.C. to 57 B.C.	..	..	..	7 years
(Gardabhilla Dynasty continued).				
Vikramāditya Śakāri, 57 B.C. to 3 A.D.	..	..	..	60 years
Mādhavāditya, 3 A.D. to 44 A.D.	..	..	..	41 years
Dharmāditya 44 A.D. to 54 A.D.	..	..	..	10 years
Vikramacaritra, 54 A.D. to 99 A.D.	..	..	..	45 years
Bhailla, 108 A.D. to 119 A.D.	..	..	..	11 years
Nailla, 119 A.D. to 133 A.D.	..	..	..	14 years
Nahad, 133 A.D. to 142 A.D.	..	..	..	9 years

Dr. Shah mentions two Kings, between Vikrama-Charitra and Bhailla but their names cannot be ascertained even from the Jain sources: excluding them, there are seven Kings of the Gardabhilla dynasty counting them from Vikramāditya, *i.e.*, after the interruption caused by the Śaka rule. This fits in with the description in the *Matsya Purāṇa* that seven Gardabhillas

will *again* rule over the earth, presumably after the Yavana or Greek Kings. The Śaka Kings who ruled during the period of the interruption were probably Satraps deputed yearly by the ruler in the Śakasthāna (Seistan), and as their rule lasted for 7 or  $7\frac{1}{2}$  years there is a probability of the existence of eight rulers during the period of the interruption.

The *Vāyu Purāṇa* gives another garbled account in Chapter 99, Verses 360–61.

सप्तगर्दभिनश्चापि ततोऽथ दशवैशकाः ।

यवनाष्टौ भविष्यन्ति तुषारास्तु चतुर्दश ॥

“There will be seven kings of Gardabha dynasty. There will be then ten Śaka Kings. There will be eight Yavana Kings and fourteen Tushara Kings.”

The *Viṣṇu Purāṇa* mentions ten Gardabhilla Kings; so also the *Bhāgavata Purāṇa*. Including Gandhavasena the founder of the dynasty, there were 8 Gardabhilla Kings and if the two unknown Kings mentioned in the Jain sources are taken into consideration, there will be in all ten Kings of the dynasty. But the data furnished by the *Purāṇas* and the Jain sources are such that it is not possible to construct any history out of them. One thing is, however, certain that when the Jain and Hindu sources agree on the existence of the Gardabhilla dynasty it will have to be taken as a historical fact. The elaborate description of this dynasty given by the Jain Pandits and the amazingly scanty description given in the Hindu *Purāṇas*, incline me to hold that the Gardabhilla Kings were Jains and that is probably the reason why King Vikramāditya does not figure conspicuously in Hindu *Purāṇas* but his greatness could not remain concealed from the popular imagination. The result was that a great mass of legends gathered round his name and appeared in folk-lore from time to time.

The plot of *Vikramorvaṣīyam* seems to me to commemorate the liberation of Ujjain from the grip of the Śaka Satraps who ruled over the country between 64 B.C. and 57 B.C. The Asura Kēshi is said to have captured Urvaśī and Pururavas had to fight against him and rescue Urvaśī. Urvaśī falls in love with him. A drama was staged by the great Bharata-Muni before the gods. The name of this drama was लक्ष्मीस्वयंवर (the marriage of Lakṣmī). Urvaśī is said to have forgotten the instructions of the stage-director Bharata-Muni—who curses her. She is subsequently transformed into a creeper. The King Pururavas becomes mad and wanders about in search of her and finally when Urvaśī is released from the curse, there is again a re-union between her and the king. Nārada, the divine sage, carries

the message of Indra that Urvaśī should enjoy the company of Pururavas as long as he lived.

इयं चोर्वशी यावदायुस्तव सह धर्मचारिणी भवत्विति ।

If our inference that Urvaśī personifies Ujjain in the drama, is correct, how is the temporary loss of Urvaśī by her transformation into a creeper to be accounted for? It may be due to poetic fancy which heightens the dramatic effect by introducing a separation between the two lovers or it may be a reference to a temporary absence of Vikramāditya from Ujjain and a final return and stay till his death.

According to Jain sources, Vikrama had left the city and remained *inognito* for sometime. He had installed his brother Bhartṛhari as his regent with full powers in his absence. Bhartṛhari was disgusted with the world over the scandalous behaviour of his dearly loved wife Pingala and retired into forest. This compelled Vikramāditya to come back to Ujjain and assume control of affairs as before.

The *Matsya Purāṇa* mentions the dynastic list of Āndhra Kings who are predicted to rule for 311 years :

शतानि त्रीणि भोक्ष्यन्ते वर्षाण्येकादशैव तु ।

आन्ध्राः श्रीपार्वतीयाश्च ते द्विपंचाशतंसमाः ॥

“The Āndhra Kings will rule for 311 years, and the Parvatiya Kings will rule for 52 years.”

Mention is made of Ābhīra Kings, Kilkila Kings and Yavana Kings who will rule over the earth. Curiously enough, the powerful Gupta Kings are not mentioned in this *Purāṇa*. A more powerful dynasty than the Gupta dynasty did not exist in the ancient Indian history. The omission of this dynastic list from this *Purāṇa* suggests that the compilation must have taken place before the Gupta period and after the end of the Āndhra rule. This latter event took place by 225 A.D. and the true Gupta period commenced in 320 A.D. The Parvatiya Kings mentioned in the *Matsya Purāṇa* may have been the early Guptas who ruled for 49 years according to Jain sources. The Gupta period, according to these commences in 217 A.D. and from this year to A.D. 320, there are 49 years which roughly correspond to the period of the rule of the Parvatiya Kings which is mentioned as covering 52 years. If this supposition holds water, the compilation of the *Matsya Purāṇa* will have to be placed at the beginning of the true Gupta period.

Now *Matsya Purāṇa* gives the story of Urvaśī and Pururavas which is practically the same as given by Kālidāsa in *Vikramorvaśiyam*. The story

given is as follows:—"Pururavas who was the son of Budha, was in the habit of paying a visit to Indra every day. On one occasion, he having ascended his chariot, accompanying the Sun in his southern course, saw Urvaśī and Citralekhā being forcibly carried away by a demon called Keśin. Pururavas defeated the demon in a fight. Having recovered Urvaśī, he made a present of her to Indra. Indra arranged for the staging of a play 'Lakṣmī Swayamwara' (Lakṣmī's marriage) a dramatic creation of the sage Bharata. Urvaśī acted the part of Lakṣmī in that dramatic representation. She saw Pururavas and forgot the acting in which she was instructed by Bharata. The sage got angry and cursed her that she would be separated from her lover and would remain transformed into a creeper for 55 years. Pururavas also would be changed into a goblin during that period in the same forest. After the expiration of the curse, Urvaśī joined Pururavas who bore him eight sons."

It seems that this story is a clumsy imitation of the plot of Kālidāsa in *Vikramorvaśīyam*. The story of Pururavas and Urvaśī first appears in the *Rigveda* (X. 95). It is mentioned in the *Śatapatha Brāhmaṇa* (V. i-2). The version of the story as given in the *Viṣṇu Purāṇa* which has the nearest approach to the Vedic story is as follows:—"Once the gods Mitra and Varuṇa who had instituted a sacrifice happened to see Urvaśī. Her very sight perturbed their self-control, and they pronounced a curse upon her 'Thou shall become the consort of a mortal.' She by virtue of her feminine graces fascinated the king Pururavas at Pratiṣṭhāna and offered to love him if he could agree to abide by two conditions she would lay: (i) that she should not see the person of the king divested of his raiment, except on the bed and (ii) that he would always guard her two pet rams. This being consented to, Urvaśī lived long with Pururavas and conceived. The Gandharvas did not like that she should stay so long in the world of the mortals, for they found their enjoyments stale in her absence. They, therefore, hit upon a plan to bring her back to heaven. In the fourth year of her sojourn on the earth, they kidnapped at night both the rams, one after the other. Urvaśī heard of the bleating of the first ram and ejaculated, "My pet is being carried away, as if I had none to protect me." This awakened the sleeping Pururavas, who, however, did not leave his bed, fearing lest he should be seen naked by Urvaśī. As they removed the second ram, she repeated her cry. This time, the king could not restrain his indignation, and thinking that the darkness of the night would screen him from the view of his consort, leaped out of his bed and sought to pursue the kidnappers. No sooner was he off the couch than the Gandharvas produced lightning flashes which exposed the naked Pururavas to the view of Urvaśī,



who at once vanished. Pururavas wandered disconsolately in search of her, until he came to a lotus-pond in Kurukshetra where he saw Urvaśī with four other nymphs sporting in the water. (Urvaśī and her friends were floating in the form of *Ati* birds, and on Urvaśī's telling that it was this great man with whom she had lived, all of them manifested themselves as nymphs.) He pleaded with her in words जाये ह तिष्ठ मनसि घोरितिष्ठवचसि etc., but to no avail. In reply she said, 'What a foolish impulse you are actuated by; I am pregnant, come back after a year; I shall be delivered of the child and shall then pass a night with you.' (In reply she said, 'Pururavas, you have failed to fulfil the conditions, go back home; I cannot be won by you. Let you know that there can be no lasting friendship with women; hearts of hyenas are the hearts of women.' She then relented and laid bare her heart to him.) On his return, Urvaśī made over his son Ayus to him and informed him that the Gandharvas were pleased to confer a boon upon him and that he should ask for being elevated to the sphere of the Gandharvas. (This would naturally bring him into a perpetual union with Urvaśī.) The Gandharvas made a gift of a vessel of fire to the king and told him that if he would perform a sacrifice with the fire contained in the vessel, he would be one of the Gandharvas. When returning through the forest, he thought to himself that he had got only a vessel of fire instead of his dear Urvaśī, a shadow for the substance. He therefore deposited the vessel there in the forest and returned to his capital. At the dead of night, he woke up and reflected that he had not acted wisely in leaving the vessel in the forest, for it was by means of that vessel that he was to be elevated to the same sphere as that of Urvaśī. He left for the woods to get back his vessel, but he could not find it. He came to the spot where it was left and he noticed that two trees *Aśvattha* and *Śamī* stood there. He broke a branch from either tree and carried them back to his palace. There by rubbing the two sticks together, he generated fire with which he performed sacrifice until he obtained the rank of a Gandharva and was for ever united with his beloved Urvaśī."<sup>20</sup>

*Viṣṇu Purāṇa* which expressly refers to the Gupta dynasty, must be later than the *Matsya Purāṇa* and since *Viṣṇu Purāṇa* has abandoned the story of Urvaśī and Pururavas mentioned in the *Matsya Purāṇa* and has reverted to the Vedic story, the natural inference is that the story contained in the plot of *Vikramorvaśīyam* was regarded as an expression of poetic fancy or in all probability as having been borrowed from a poet. Any way, the story in the plot of *Vikramorvaśīyam* which is found in the *Matsya*

<sup>20</sup> *Vikramorvaśīyam*, edited by Charu Deva Sastri.

*Purāṇa*, can be definitely considered to have existed before the Gupta times. It is inconceivable that Kālidāsa borrowed it from the *Matsya Purāṇa*. The inference, therefore, is that it appeared before the true Gupta period began, that is to say before 320 A.D. This is a circumstance which conflicts with the theory of the fourth or fifth century A.D. as to the date of Kālidāsa.

Finally we may turn to *Śākuntalam*. This play is evidently an elaboration of the earlier play of *Vikramorvaśīyam*. We have in both the plays, the intervention of Indra who was a friend of the hero. Śākuntala, though not an Apsarā, was the daughter of an Apsarā, brought up in the surroundings of a hermitage. The operation of a curse is a factor common to both the dramas. A jewel re-unites the lovers in *Vikramorvaśīyam* and a ring does it in *Śākuntalam*. A son is presented to the hero in romantic circumstances in both the plays. But in *Śākuntalam*, we have a scene in which the poet works like a master-artist on the tenderest chords of human heart. There is nothing in the entire Sanskrit literature which excels in softness and majesty this description of re-union of the happy family after years of separation and cruel forgetfulness.

In the Sixth Act of *Śākuntalam* there is a reference to the legal theory that the property of a person who dies son-less but after leaving a wife or wives behind, escheats to the State. The minister actually made a recommendation to this effect to the king who, on making enquiries, came to know that there was a possibility of a posthumous son being born to the deceased merchant. A posthumous son is entitled to inherit his father's property just as much as a son born before the death. But the point of importance to be noted is that widow or widows surviving the husband could not be entitled to inherit the property. This is opposed to the canons of the *Smṛtis* and refers to a state of affairs prevailing in early Hindu Society. If the present *Manusmṛti* was recast sometime before the Christian era, in which the right of the widows to inherit was recognised, the reference to a state of affairs that existed many centuries before the Christian era may mean an attempt on the part of the poet to paint a picture of the times of Dushyanta who may be taken to have lived by 1400 B.C. assuming that the Mahābhārata war took place in 1197 B.C. as is maintained by Mr. K. L. Daftari. There is no wonder if the legal theory under which the widow was incapable of inheriting her deceased husband's property flourished in or about 1400 B.C., but the theory is probably out of place in the first century B.C. and certainly so in the fourth or fifth century A.D. If the legal theory represents the contemporary law of inheritance, it is absolutely inconsistent with the fourth or fifth century A.D. theory about the date of Kālidāsa, though there is a bare possibility of its existence in the first century

B.C. since we do not definitely know the date when the *Manusmṛti* was recast. I am, therefore, inclined not to attach much value to the adumbration of the legal theory about the right of succession of widows in the Sixth Act of *Śākuntalam*. If at all it is helpful in any way, it is helpful as I have said before, to my theory but it is definitely opposed to the fourth or fifth century A.D. theory.

There is nothing else in *Śākuntalam* which in my opinion, throws any light on the date of Kālidāsa.

I summarise the position as follows:—

(1) The Gardabhillas ruled at Ujjain in the first century B.C. and Vikramāditya (Śakāri) was the king who recovered his lost kingdom from the hands of the Śakas who had driven out his father Gandharvasena.

(2) This incident took place about 57 B.C. and the tradition that Vikramāditya the Gardabhilla King lived and flourished about 57 B.C. is not based only on imagination but on Jain scriptures which are substantially corroborated by Hindu *Purāṇas* and the *Kathāsaritsāgara* of Somadeva. The existence of an era, a great landmark in history bears testimony to his existence and though its association with Vikramāditya has been discovered at a much later date, its country-wide recognition is a conclusive proof at this distance of time of the existence of the great hero Vikramāditya and his association with nine gems of his court, notwithstanding the difference of opinion regarding the identification of the gems.

### *The Birth-place of Kālidāsa*

The Bengalis claim that Kālidāsa was a native of Bengal and their main reliance is on the supposition that in *Meghadūta*, Kālidāsa begins the year on Āṣāḍha Sudh 1, and the Bengalis, too, begin their year on the same day. It is argued on this basis that Kālidāsa migrated from Bengal to Mālwa but did not forget the beginning of the year, knowledge of which was bred into his bone while he was in his native place.

In the first place, the supposition that Kālidāsa gave Āṣāḍha Sudh 1 as the day of the beginning of the year is wrong. The first day of Āṣāḍha mentioned in the *Meghadūta* was indicative of the beginning of the rainy season. In stanza 3, the matter is made clear by the poet himself:

मेघालोके भवति सुखिनोप्यन्यथावृत्तिचेतः ।

कण्ठाश्लेषप्रणयिनिजने किं पुनर्दूरसंस्थे ॥

It is the beginning of the monsoon that makes the separated lovers very anxious to meet each other. The beginning of rains is the mating season for

the Balākas (cranes). It is also the season for the swans to go back to the Mānasa lake (*vide* st. 10 and 11). The fields had been recently ploughed up for sowing and there was the usual waiting for the rains (st. 16). The crows had started the building of their nests in anticipation of the rains (st. 23). All these and many other references clearly denote that the first day of Āṣāḍha was chosen as a most suitable day for a message to be sent by a lover himself, weighed down with grief to console the beloved and assure her that the end of separation was not far off.

It is a well-known phenomenon that seasons have varied in their beginnings and durations and this variance is caused by the precession of the equinoxes and also to some extent by local causes. The rainy seasons in India have also varied from Bhādrapada to Śrāvaṇa and from Śrāvaṇa to Āṣāḍha and finally from Āṣāḍha to Jyeṣṭha as at present. Tilak has explained this position in his well-known book '*The Orion*'.<sup>21</sup> In the first century B.C., the rainy season in all probability commenced on the first day of Āṣāḍha and there is no reason to suppose that Kālidāsa intended to select this particular day to indicate the beginning of the year.

The description of the rice-fields cannot be a factor for determining the birth-place of Kālidāsa who, as every body admits, was a much-travelled man. There is nothing in any of his works which shows his intimacy with Bengal and the argument based upon the name Kālidāsa is extremely hollow.

Then there is the Kāshmir theory. Pandit Lachhmidhar maintains that Kālidāsa was a native of Kāshmir and his chief argument centres round the description of some places and their names in the works of Kālidāsa. It is also alleged that there are unmistakable allusions to some legends and usages of Kāshmir and finally reliance is placed on that religious philosophy of the poet, which is peculiar to Kāshmir.

Now Kālidāsa has undoubtedly given a grand description of the Himalayas. In the *Meghadūta*, he asks the cloud to proceed from Kurukṣetra to a place near Kankhal which is near Hardwar (st. 52). From that place the cloud is asked to halt on the summits of the Himalayas and then visit several places worth seeing in the vicinity (st. 59). Finally the cloud has to pass through the heron's hole to the Kailasa. The cloud is instructed to drink the waters of the Mānasa lake in which golden lotuses bloomed and then visit Alakā which was situated on the lap of the Kailas. This was the route which was known to Kālidāsa and the several places

<sup>21</sup> Pp. 216 and 217.

worth seeing referred to by him must be the hermitages of the sages and the holy places which are mentioned in some *Purāṇas*. There is, however, no doubt about the geographical position of these several places which lie between Hardwar (near Kankhal), and Alakā and by no stretch of imagination, can we shift the position to Kāshmir. So long as Kurukṣetra, Kankhal and Kailas remain where they are to-day, it is impossible to maintain that Kālidāsa described the region of Kāshmir in *Meghadūta*.

Let us turn to the *Raghuvamśa*. Dalīpa was the king of Ayodhya and he started with his wife in one chariot (एकस्यन्दनमास्थितौ st. 36, Canto 1) for the hermitage of Vasiṣṭha. He had taken a very small retinue with him in order to avoid inconvenience to the sage. The hermitage of Vasiṣṭha was situated in the Himalayas and the lion-incident took place in a valley of the same range.

गंगाप्रपातान्तविरूढशर्षं गौरीगुरोर्गन्धरमाविवेश । (रघु. 2-26)

The expression गौरीगुरु the father of Pārvatī is very significant. The name Ganga has, however, been used to denote a river in the Himalayas. In fact, according to the *Rāmāyaṇa*, all streams flowing on the Himalayas were parts of the Ganges.

विससर्ज ततो गंगां हरो बिन्दुसरःप्रति ।  
 तस्यां विसृज्यमानायां सप्तस्रोतांसि जज्ञिरे ॥  
 ल्हादिनी पावनी चैव नलिनीच तथैवच ।  
 तिस्रः प्राची दिशं जग्मुर्गङ्गा शुभजलाः शुभाः ॥  
 सुचञ्चलश्चैव सीताच सिन्धुश्चैव महानदी ।  
 तिस्रश्चैता दिशं जग्मुर्गङ्गां तु दिशं शुभाः ॥  
 सप्तमी चान्वगात्तासां भगीरथरथं तदा ।  
 भगीरथोऽपिराजर्षिर्दिव्यं स्यन्दनमास्थितः ॥

(St. 11 to 14, Canto 43, *Bālakāṇḍa*)

“The God Śankar released the Ganges from his tangled locks into a lake called Bindu. The Ganges issued from the lake into seven streams. Three of these Lhadini, Pavani, and Nalinī took the eastward direction, Sucakṣu, Seetā and Sindhu took the westward direction. The seventh followed the course behind Bhagīratha who moved on in his chariot.”

If the king Dalīpa started from Ayodhyā on his journey to the hermitage of Vasiṣṭha, he must have taken the northward direction and the place where he will meet the Himalayas will be not more than 200 miles distant from Hardwar, or Kankhala which would lie to the west. But the mountain range is the same and the description of scenery could be almost identical.

सकीचकैर्मरुतपूर्णरघैः कूजद्विरापादितवंशकृत्यम् ।

शुश्राव कुञ्जेषु यशः स्वमुच्चैरुद्गीयमानं वनदेवताभिः

(*Raghuvamśa*, Canto II)

“The king heard his own glory sung by the forest deities to the accompaniment of the flutes which were none other than the bamboos whose holes were filled with wind.”

Compare it with the following stanza of the *Meghadūta*:

शब्दायन्ते मधुरमनिलैः कीचकाः पूर्यमाणाः ।

संरक्ताभिस्त्रिपुरविजयो गीयते किन्नरीभिः ॥

“The bamboos filled with wind sing sweet music. Kinnara women of sweet voices sing, to their accompaniment, the glory of the triumph over Tripura.” Many such similarities can be pointed out to illustrate the sameness of the Himalayan region.

King Dalīpa started from Ayodhyā for the Himalayas in one chariot only, avoiding a large retinue. He could not possibly have contemplated a journey of 700 miles in one chariot to reach the place pointed out by Pandit Lachhmīdhara in Kāshmir. The distance on the other hand between Ayodhyā and the Himalayas cannot be more than 60 or 70 miles and it appears that it was negotiated in one day as is apparent from the text. The king reaches the hermitage in the evening.

सदुष्प्रापयशः प्रापदाश्रमं श्रान्तबाहनः ।

सायंसंयमिनस्तस्य महर्षेर्महिषीसखः ॥ ४८ ॥

(*Raghuvamśa*, Canto I)

“The king reached the hermitage with his horses fatigued in the evening, etc.” The whole journey seems to have been done during the course of a day. The king seems to have started on the Brahma-muhūrta as is indicated by the reference to the worship of Brahmā in stanza 35, Canto I. The morning breezes are also referred to, along with the singing of the birds on the way. The butter presented by the milk-men is described to be prepared that very morning from milk collected on the previous day. Milk is usually churned in the morning and the preparation of fresh butter is associated with the morning time. The inference appears to be irresistible that the hermitage was somewhere to the north of Ayodhyā, within the confines of the kingdom, particularly when the sage Vasiṣṭha was a priest (*Guru*) of the Royal family.

तौ दंपती वसिष्ठस्य गुरोर्जगमनुराश्रमम् ।

(*Raghuvamśa*, st. 35, Canto I)

Will it be reasonable to suppose that the priest of the Royal family lived at a distance of 700 miles from the Royal court, possibly within the

territory of another king? Then the journey to the hermitage appears to have been through plain country which had been well settled.

ग्रामेष्वामविस्त्रेषु यूपचिन्देषु यज्वनाम् ।

अमोघाः प्रतिगृह्णन्तावध्यन्तिपदमाशिषः ॥ ४४ ॥

(Canto I)

“The king passed through villages gifted by himself and marked by sacrificial posts and received the blessings of persons given to the performance of sacrifices, after the latter had made respectful offerings.”

There were milk-men who received the king on the way and presented fresh butter to him. Sometimes the way passed through the forests and by the side of lakes also. But nowhere have any mountain ranges or any big rivers been mentioned on the way. If we bear in mind the present topography of the region between Ayodhyā and the Nepalese border, we find a plain country lying between the two places. The possibility is of course there, of some portions of this region being covered with forests.

The regions of Himalayas described in the *Kumārasambhava* are the same, as those described in the *Meghadūta* and the *Raghuvarṇṇa*. The following dispels all doubt in the matter.

भागीरथीनिर्झरसीकराणां वोढा मुहुःकंपितदेवदारुः ।

यद्वायुरन्विष्टमृगैः किरातैरासेव्यते भिन्नशिखंडिबर्हः ॥ १५ ॥

(कुमार. Canto I)

The word Bhāgīrathī can apply to no river other than the Ganges proper. Stanza 29 of the same canto refers to the name Mandākinī on whose sandy bed Pārvatī played during her childhood. Mandākinī is the name the Ganges has while flowing through the upper regions.

The God Śankar also resided for penance at a place adorned with Devadāra trees watered by the spray coming from a cataract of the Ganges.

सकृत्तिबासास्तपसे यतात्मा गंगाप्रपातोक्षित देवदारुः ।

प्रस्थं हिमोद्रेष्टृगनाभिगग्निं किञ्चित्कणक्लिन्नरमभ्युवास ॥ ५३ ॥

(कुमार. Canto I)

After burning Madana (Cupid) to ashes, when Śankara made himself scarce, Pārvatī commenced her austerities on the summit of the Himalayas known as गौरीशिखर (Gaurishikhara). It may be the same as गौरीशंकर one of the highest peaks of the Himalayas.

प्रजासुपश्चात्प्रथितं तदाख्यया जगाम गौरीशिखरं शिखण्डिमत् ।

(कुमार. Stanza 7, Canto V)

Oṣadhiprastha is said to be the capital of the Himalayan regions.

तत् प्रयातोषधिप्रस्थं सिद्धये हिमवत्पुरम् ।

महाकोशीप्रपातेऽस्मिन् संगमः पुनरेव नः ॥

(कुमार. Stanza 33, Canto VI)

There was a water-fall called Mahākośī in or near the capital which was a fortress surrounded by the current of the Ganges (st. 38, Canto VI). The mountain Gandhamādana was the garden outside the city and at the marriage of Pārvatī, the rivers Ganges and Yamunā remained present in bodily form.

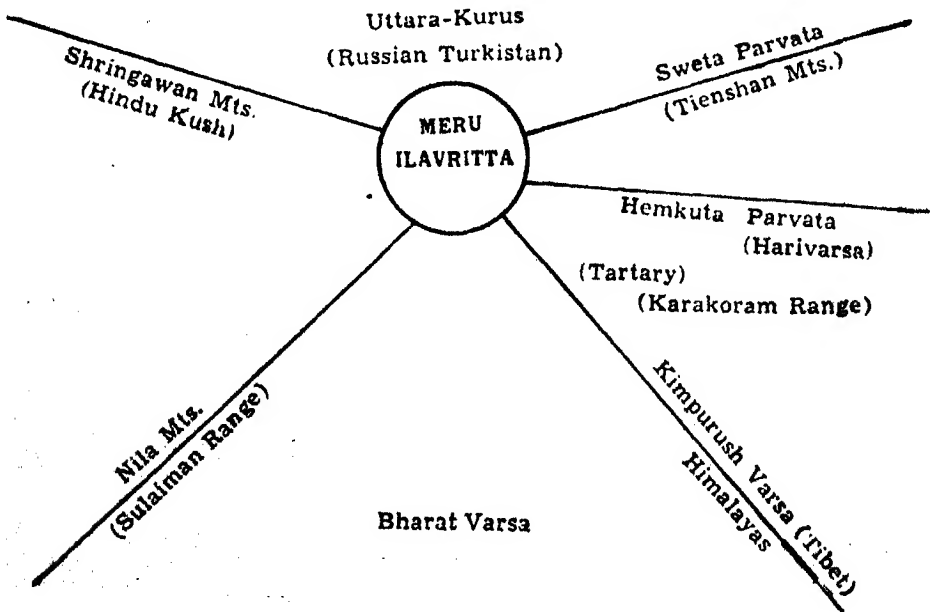
मूर्तेच गंगायमुने तदानीं सचामरे देवमसेविषाताम् ॥ ४२ ॥

(कुमार. Canto VII)

They were so present because the marriage took place near their places of birth and not in Kāshmir.

It is clear from a close reading of the *Meghadūta*, *Raghuvamśa* and *Kumārasambhava*, that the Himalayan range described by Kālidāsa was the one that lay to the north of Kankhal and extended eastward towards the north of Ayodhyā. The evidence furnished by these works is so unmistakable that no reasonable man can say that Kālidāsa was describing a region in far off Kāshmir.

In *Śakuntala* and *Vikramorvaśīyam*, the description is of Hemakūṭa mountain. This is a different region altogether. According to the *Purāṇas*, the following is the description of the geographical situation:





The Hemakūṭa mountain is beyond the Himalayas and the suggestion of Pandit Lachhmidhar that it was the Hemakūṭa mountain in Kāshmir is groundless. The Hemakūṭa, on all authorities was beyond the Bhārata-varṣa and was situated in the Harivarṣa. The capital of king Pururavas and king Dushyanta was Pratiṣṭhān which is identified with the modern Allahabad being the only place situated at the confluence of the Ganges and the Jumnā. The *Purāṇas* too mention that Pratiṣṭhān was an old name of the modern Prayāga (Allahabad).

In the *Śākuntalam*, two hermitages have been mentioned—one of Kaṇva and another of Marichī. The latter has been expressly located on the Hemakūṭa mountain and has therefore nothing to do with the Himalayan regions. The former was situated near Hastināpur and must have been at a distance of about 80 to 100 miles from the capital. In the Sixth Act of *Śākuntalam*, there is a reference that the king had told Śākuntala before he departed from hermitage, after his first union with her, that he will send his representatives to fetch her after three days.

एकैकमत्र दिवसे दिवसे मदीयं  
नामाक्षरं गणय गच्छसि यावदन्तम् ।  
तावत्प्रिये मद्वरोधं गृहप्रवेशं  
नेता जनस्तव समीपमुपैष्यतीति ॥ १२ ॥

(शाकुं. Canto 6).

It means that one day and half will be practically required for reaching the capital. In another place in the Second Act, the queen-mother's message was delivered to the king while at the hermitage of Kaṇva, according to which, the king was expected to join his mother in a festival on the fourth day.

देव्याज्ञापयति । आगासिनि चतुर्थदिवसे पुत्रपिण्डपालनो नामोपवासो भविष्यति । तत्र दीर्घायुषा-  
वश्यं संभावनीयेति ।

This also indicates that the distance must not have been greater than what would be covered by a journey of two days or so. If we locate Hastināpur somewhere near Delhi, the distance up to the range of the Himalayas does not exceed 120 miles by a journey by the present road between Delhi and Hardwar. The hermitage of Kaṇva was by the side of the river Mālīnī which was a river flowing through the Himalayas. In the *Mahābhārata*, where the birth of Śākuntala is recounted, she is stated to have been born near the river Mālīnī in a summit of the Himalayas.

प्रस्थे हिमवतो रम्ये मालिनीमभितो नदीम् ।  
जातमुत्सृज्य तं गर्भं मेनकामालिनी मुनु ॥ १० ॥

(*Ādiparvan*, Ch. 72)

So the hermitage of Kaṇva was in the Himalayan region and very likely it was somewhere beyond Kankhala to the east. There is thus no room for contention that it was the topography of Kāshmir that was before the mind of the poet when he gave the description of the Himalayas; with such clear references it will be simply audacious to shift the regions to Kāshmir.

There may be a Vasiṣṭhāśrama in Kāshmir but it cannot be the one referred to by Kālidāsa. It is futile to say from the expression भूतपतेरास्पदम् (the abode of the lord of creatures), that there is a reference to Bhuteshwar in the valley of Kanakavāhini river in Kāshmir. As regards the *Tirthas* like शक्रावतारतीर्थ, शचीतीर्थ they may have existed where they are placed by the poet and it is not an unusual phenomenon in India that the *Tirthas* and Āshramas bearing the same names are to be found in different parts of the country. If we have a Pañçavatī at Nasik, we have a Pañçavatī in Bastar State also. Instances can be multiplied in this respect. It is possible that a scion of the Vasiṣṭha family migrated to Kashmir and established a hermitage there. It is possible that several *Tirthas* were also founded in imitation of the well-known ones. But we must guard against going beyond the plain wording of the poet. We have no right to transfer the poet's description to the region of Kāshmir when the poet himself has clearly indicated a particular region.

Authority of Nīlmata is next relied on. Nobody has yet informed the world, of the age of Nīlmat. Capital is sought to be made of the reference to Nikumbha who was a friend of Kumbodara, the so-called lion. The Gaṇas of Śankar might be in pairs just as the guards of Śrī Viṣṇu, Jaya and Vijaya. Kumbha and Nikumbha might be such a pair. If Nīlmata says that Nikumbha was a Piśāca, there is no reason why a Piśāca and a lion should form a pair. A good deal of attention is devoted by Pandit Lachhmi-dhar to the discussion of the religious philosophy of Kālidāsa and the industry of the learned Pandit is really very remarkable. But with great respect to him, it may be said that his arguments are too far-fetched to produce even a semblance of conviction. The Kāshmir theory must, therefore, be rejected. It is indeed fortunate that someone, a native of Ladak or Ubek, has not come forward to say that because there is a description of Hemakūṭa mountain, Kālidāsa originally belonged to that region and then migrated to the Himalayan regions and from there to Mālwā.

A word perhaps is necessary to be added in connection with the reference to the usages of Kashmir. It is said that Indumatī got the garland placed on the neck of Aja through Sunandā after she approved of him because Kālidāsa was mindful of a similar usage in Kāshmir. What Kālidāsa

was describing was a usage in Vīdarbha, and is there any proof that such a usage did not exist in that country? Similarly about the inhaling of smoke after the Lāja-homa ceremony, there are no data that such a custom did not exist in Vīdarbha. The *Gṛhyasūtras* mention this ceremony and it must have been followed in the times of Kālidāsa. Customs and ceremonies change with the times and it is very risky to base inference on these without full knowledge of the circumstances in which the customs and ceremonies are placed.

My conclusion is that it is too risky to resort to flights of fancy in determining the birth-place of Kālidāsa, particularly when reliance is placed on the similarity of names of places mentioned in the works of the poet. The evidence offered by the so-called usages and customs is too slippery and vague to be of any use for the purpose in view. The safer thing is to deduce conclusions from the admitted and unquestioned domicile of Kālidāsa in Mālwā and locate his birth-place in the same region. The description of hermitages which were and must have been non-existent in the time of Kālidāsa and the several regions in the Himalayas could only be a guess-work founded on the general knowledge of the regions derived either from personal visit or hearsay information. In mentioning Oṣadhi-prastha, Gaurīśankar, Mandākinī, Bhāgīrathī or Mālinī, no particular spots are indicated with precision and certainty. Only the regions can be inferred with certainty and we are required to locate the places within those regions according to our fancy. It is too much to say that Kālidāsa must have been born at some place within these regions. On the other hand, there is no vagueness in the description of places in Mālwā. They existed in the time of Kālidāsa and the precision and certainty with which he describes them compels us to trace his birth-place from his accepted domicile. Migration from outside has to be affirmatively established and in the absence of such proof, it must be accepted that the place of the domicile of Kālidāsa must be his birth-place. I have indicated elsewhere<sup>22</sup> that no proof of the exact birth-place of Kālidāsa in Mālwā is also forthcoming. All that we can say with certainty is that he was born in Mālwā and spent practically the whole of his life there.

I summarise my conclusions as follows:—

- (1) Kālidāsa was not a native of Bengal.
- (2) Kālidāsa was not a native of Kāshmir.
- (3) Kālidāsa was born and brought up in Mālwā and nowhere else.

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<sup>22</sup> "Kālidāsa—His Birth-place and Date," *Nagpur University Journal*, 1939, No. 5.

## CYRUS THE GREAT AND THE BATTLE OF THE MAHĀBHĀRATA

BY PROF. H. C. SETH, M.A., PH.D. (LONDON)

It is generally believed by the scholars that the kernel of the *Mahābhārata* epic, which originally consisted of only 8,800 ślokas, has a historical background of a conflict between closely related Aryan tribes. Not only the historical nucleus but even the date of the Bhārata battle is yet so uncertain. Three methods have been employed to fix the date of this important battle: (1) The post-Mahābhārata genealogical lists of the kings given in the *Purāṇas*. These lead to very uncertain results because of the doubtful nature of these genealogies, where contemporary personalities and dynasties are so often treated as successive, and also because of the doubtful reign-period assigned to different kings and dynasties. (2) Astronomical data, which is of a very highly speculative nature. (3) Evidence deduced from the growth of the Indian civilisation and literature. Here too the remote antiquity attached to the early Indian literature makes the task difficult. But it may yield result which may be of some value in this connection. Max Müller on the basis of this evidence divided the Vedic period into four, that of the Sūtra literature, 600–200 B.C., the Brāhmaṇas, 800–600 B.C., the Mantra period, including the later portions of the *Rigveda*, 1000–800 B.C., and the *Chhandas*, covering the older and more primitive Vedic Hymns, 1200–1000 B.C.<sup>1</sup> More recent studies seem to corroborate this view-point. As Berriedale Keith remarks, “the older Upanishads can be dated as on the whole not later than 550 B.C. . . It is not likely that the Brāhmaṇa period began later than 800 B.C., and the oldest hymns of the *Rigveda*, such as those to *Uṣas*, may have been composed as early as 1200 B.C. To carry the date further back is impossible on the evidence at present available, and a lower date would be necessary if we are to accept the view that the Avesta is really a product of the sixth century B.C., as has been argued on grounds of some though not decisive weight; for the coincidence in language between Avesta and the *Rigveda* is so striking as to indicate that the two languages cannot have been long separated before they arrived at their present condition.”<sup>2</sup> Macdonell also in his *History of Sanskrit Literature* (Ch. VIII) takes the period of the Brāhmaṇas as about 800–500 B.C.

<sup>1</sup> *Cambridge History of India*, Vol. I, p. 112.

<sup>2</sup> *Ibid.*, p. 113.

Now as regards the *Mahābhārata* epic, the earliest references to it are to be traceable only in the literature of the fifth and the fourth century B.C. As Winternitz remarks, "An epic '*Bhārata*' or '*Mahābhārata*' did not exist in the Vedic period and there is no certain testimony for an epic *Mahābhārata* before the fourth century B.C."<sup>3</sup> Hopkins also suggests that "negative evidence in India makes it improbable that any epic (*Mahābhārata*) existed earlier than the fourth century B.C."<sup>4</sup> Macdonell too concludes that "the original form of our epic came into being about the fifth century B.C."<sup>5</sup>

As regards the Bhārata battle itself it does not appear likely that it took place much before the fifth century B.C. Though in the whole of the Vedic literature there is no reference to this battle, yet from the manner in which the names of the individual heroes occur, C. V. Vaidya rightly concludes that "the Mahābhārata war took place about the time when the *Brāhmaṇas* were being and had partly been composed...The *Brāhmaṇas* contain no direct reference to the great war no doubt, but this is only a negative argument. For there are other indications which show that the war must have taken place about the middle of the Brāhmaṇa period. The older portions of the *Śatapatha Brāhmaṇa* speak of the Kurus and Pāñchālas as two flourishing communities. The later portions have a direct reference to Janamejaya Parikṣita and his brothers Śrutasena, Ugrasena and Bhīmasena, the great-grandsons of Arjuna. These facts would lead us to think that the great war must have taken place in the interval. We have again the direct mention of 'Kṛiṣṇa Devakī Putra' as a teacher of Vedānta in the *Chāndogya Upanishad*. Vyāsa lastly is mentioned as a *Riṣi* in one of the *Pariśiṣṭas* of the Kāṭhaka Brāhmaṇa of the Black Yajus, though we have no mention of him earlier."<sup>6</sup> As discussed above, the later period of the Brahmanas and the beginning of the Upanishads will fall about the sixth century B.C. Thus it seems very likely that the Bhārata battle took place about the sixth century B.C.

The surmise that the battle, which formed the nucleus round which the *Mahābhārata* epic grew up, took place in the sixth century B.C. makes us reflect if in some way this battle was connected with Cyrus the Great. About the middle of the sixth century B.C. Cyrus established a vast empire extending from Central Asia to the shores of the Mediterranean.

<sup>3</sup> *A History of Indian Literature*, Vol. I, pp. 474-5.

<sup>4</sup> *Cam. His. of India*, Vol. I, p. 258.

<sup>5</sup> *A History of Sanskrit Literature*, p. 285.

<sup>6</sup> *The Mahābhārata, A Criticism*, pp. 69-70.

This was the first great Āryan empire established over this vast region. As we gather from the inscriptions of Darius (who succeeded Cyrus' son, Cambyses) at Behistun and Naksh-i-Rustam, these Persian emperors took a great pride in calling themselves Āryans and Kṣatriyas. During this period Persia, Central Asia, Afghanistan and the north-western India including the Punjab formed a stronghold of the Āryans. Bifurcation between the Persian and the Indian sections of the Āryans had not yet become so complete; and very likely the rulers of the small Āryan republics and the kingdoms in the north-western India and the Punjab were of the same stock as the family of Cyrus, with which they had, perhaps, close blood relationships.

Towards the east the conquests of Cyrus extended to Bactria and also the Kabul valley. Arrian informs us that the Indians between the river Indus and the river Kabul submitted to the Persians and paid to Cyrus the tribute that he imposed on them.<sup>7</sup> Pliny [*Hist. Nat.*, VI, 23 (25)] also informs us that Cyrus destroyed a city called Capisa in the Kabul valley. Alexander's historians record a tradition from which it may be gathered that Cyrus even attempted an unsuccessful invasion of India even beyond the Indus. Strabo informs us that Alexander learned that Cyrus led an expedition against the Indians through Gedrosia but was forced to retreat with only seven men alive.<sup>8</sup> Arrian also records that the natives of the country informed Alexander that Cyrus entered Gedrosia to invade India, but lost, before reaching it, the greater part of his army and escaped with only seven men.<sup>9</sup> Much credit has not been given to this tradition of the invasion of India by Cyrus, but it appears that there is some historical truth underlying it. In any case it seems certain that the eastern conquests of Cyrus brought him in conflict against the Indians, and as the statements of Arrian and Pliny, referred to above, will suggest, it was only after some resistance that the Indians between the rivers Kabul and the Indus submitted to Cyrus.

Now from the accounts of the end of Cyrus given by the early Greek writers we gather that this mighty and ambitious ruler after a career of unbroken conquest died in his campaigns to the east of his empire on the north-western confines of India. According to Herodotus, Cyrus died fighting Massagatæ, a war-like tribe inhabiting the high lands of the Hindukush in the Oxus region. Cyrus had in vain wooed Tomyris, the queen of the Massagatæ. Her son was slain by Cyrus and she vowed a bloody revenge

<sup>7</sup> McCrindle's *Ancient India* (*Meg. and Arr.*), p. 183 (1926 ed.).

<sup>8</sup> McCrindle, *Ancient India* (as described in Classical Literature), p. 10.

<sup>9</sup> McCrindle, *The Invasion of India by Alexander*, p. 173.

against him, which she fulfilled on the battle-field.<sup>10</sup> According to Ctesias Cyrus fell in a war against the Derbikes and their allies, Indians. Cyrus was mortally wounded by an Indian, who hit him with his javelin, *under the hip in the thigh*. He was lifted and carried to the Persian camp, and he died third day after his wound. According to Ctesias it was a very fierce battle in which both sides suffered very heavily.<sup>11</sup> Like the Massagatæ of Herodotus the Derbikes of Ctesias were also a people of Oxus region on the north-western confines of India. Ptolemy mentions that this part of the Oxus region was 'possessed by Derbikkai, called also the Derkeboi, and below them Massagetai, after whom Parnoi, and the Daai'.<sup>12</sup> According to the traditions preserved in the ancient Indian literature this region formed part of India. Malcolm rightly regarded Derbikes as an Indian tribe.<sup>13</sup>

The defeat of a mighty emperor like Cyrus, the greatest figure of the ancient world, by the Indians must have been an event of the greatest importance in those times, the memory of which was most likely to persist in the

<sup>10</sup> Herodotus, Bk. I, 201 ff.

Later Classical writers like Diodorus, Trogus, Deinon, Polyænus and others have reported an account of the battle between Cyrus and the Massagatæ similar to that of Herodotus with minor differences (see Duncker's *The History of Antiquity*).

Arrian refers to this defeat of Cyrus as follows : "With regard to the discomfiture of the Persians in the Skythian land, I cannot with certainty conjecture to what cause it was attributable, whether to the difficult nature of the country into which they were led, or to some other mistake made by Cyrus, or whether it was that the Persians were inferior in the art of war to those Skythians whose territories they invaded" (McCrindle, *Invasion of India by Alexander*, p. 86).

<sup>11</sup> Duncker, *The History of Antiquity* (Abbot's Trans.), Vol. 6, p. 121 ff.

Ctesias was a Greek Physician and Historian who lived towards the close of the fifth century B.C. In early life he was physician to the Persian emperor Arataxerxes Mnemon. He wrote a History of Assyria and Persia in 23 books, called *Persica*. His original work is now lost, but fragments of this are preserved in the works of later historians. Ctesias' work was based on information obtained from the Persian sources.

<sup>12</sup> McCrindle, *Ptolemy's Ancient India*, p. 263 (Majumdar's ed., 1927).

Later on Ptolemy mentions Massagetai again as one of the Śaka tribes in the Jaxartes region. "The tribes of the Sakai, along the Jaxartes, are the Kartai, and the Komaroi, and the people who have all the mountain region are the Komedai, and the people along the range of Askangka the Massagetai; and the people between are the Grynaioi Skythia and the Toŕnai, below whom, along mount Imaos, are the Byltai." *Ibid.*, p. 284.

This may be the Śakdvīpa of the Sanskrit literature. The Śaka ruling classes were called as Maśakas (*Mahābhārata*, *Bhīṣmaparva*, Ch. XI). Maśakas appear to be the same as Massagætæ.

Strabo also puts Massagætæ on the Indian border. Compare his remark that the Persians approached 'its (Indian) frontiers when Cyrus marched against the Massagetai'. McCrindle, *Ancient India* (as described in Classical Literature), p. 12.

Elsewhere Strabo indicates the geographical position of the Massagætæ as thus : 'Most of the Skythians, beginning from the Kaspian Sea, are Dahai Skythia, and those situated more towards the east Massagatai and Sakai.' (XI, viii, 2).

<sup>13</sup> *History of Persia*, Vol. I, p. 519.

ancient Indian literary traditions. We give below the reasons which make us suspect that Cyrus may be the Kuru prince, Duryodhana, and the battle which Cyrus fought against the Indians and his defeat formed the nucleus round which the *Mahābhārata* epic grew up:—

(1) As discussed above, the date of the battle between Cyrus and the Indians broadly synchronises with the date of the Bhārata battle. Literary evidence indicates that the Bhārata battle took place in the sixth century B.C. Cyrus also flourished in the sixth century B.C. His rise began about 559 B.C. He was defeated and slain in 529 B.C.

(2) Cyrus is the Latinised form of the Persian name Kurush. In the inscriptions of Darius, Cyrus is called as Kurush. As already noted, these inscriptions emphasise the Aryan descent of the family to which Kurush belonged. *Mahābhārata* makes Duryodhana a prince of the Āryan tribe 'Kuru', which figures so prominently in the Vedic literature. It may be noted that Cyrus' grandfather was also called as Kurush. It may be that Kuru was the designation of the family to which Cyrus belonged.

(3) The Buddhist literature recognises the Pāṇḍavas as a mountain clan.<sup>14</sup> *Mahābhārata* too presumes the Himalayas as the scene at least of the birth and the early childhood of the Pāṇḍavas. The *Mārkaṇḍeya Purāṇa* mentions Pāṇḍavas together with the Kāmbōjas, Pārśvas, Daradas, etc.,<sup>15</sup> who undoubtedly were people belonging to the highlands on the north-western confines of India.<sup>16</sup> If this tradition is correct then the Pāṇḍavas belonged to the same region to which, as already discussed, also belonged the Massagætes and the Derbikes, who played the most important part in defeating Cyrus.

(4) We may also carefully note that according to Herodotus (1, 216) the Massagætes held their wives in common. We may recall the marriage

<sup>14</sup> Compare the following remark, "The Pāṇḍus, whatever may have been their antiquity, first come into view with the later Buddhist literature, which recognises the Pāṇḍavas as a mountain clan," *Cam. His. of India*, Vol. I, p. 253.

<sup>15</sup>

काम्बोजाः पडुवाश्चैव तथैव वडवामुखाः ।

तथा च सिन्धुसीवीराः सानत्ता वनितामुखाः ॥ ३० ॥

द्रावणाः सार्गिगाः शुद्राः कर्णप्राधेयवर्चराः ।

किराताः पारदाः पाण्ड्यस्तथा पारशवाः कलाः ॥ ३१ ॥

धूर्तका हैमगिरिकाः सिन्धुकालकवैरताः ।

सौराष्ट्र दरदाश्चैव द्राविडाश्च महार्णवाः ॥ ३२ ॥—अ. ५८.

Ptolemy mentions a people whom he calls Pandouoi (Pāṇḍavas ?) on the upper reaches of the Jhelum (*Ancient India*, p. 121).

<sup>16</sup> For the identification of some of the tribes of the Hindukush region see our paper 'Central Asiatic Provinces of the Mauryan Empire' (*Indian Historical Quarterly*, Vol. XIII, 1937).



of the five Pāṇḍava brothers with Draupadī. According to the *Mahābhārata* the Pāṇḍavas declared to the great dismay of Draupadī's father that it was their old family custom that the bride should be married to all the brothers, and they were bound to follow this custom.<sup>17</sup>

Thus the Pāṇḍavas not only appear to belong to the same region as the Massagætes and the Derbikes, but like the Massagætes they too had the unique custom of holding the wife in common. These facts make one suspect if the Pāṇḍavas were the same people as the Massagætes of Herodotus. The

17

गृह्णातु विधिवत्पाणिमयैव कुरुनन्दनः ।

पुण्येऽहनि महाबाहुरर्जुनः कुरुतां क्षणम् ॥ १९ ॥

ततस्तमब्रवीद्राजा धर्मपुत्रो युधिष्ठिरः ।

ममापि दारसंबन्धः कार्यस्तावद्विशां पते ॥ २० ॥

हुपद उवाच ।

भवान्वा विधिवत्पाणिं गृह्णातु दुहितुर्मम ।

यस्य वा मन्यसे वीर तस्य कृष्णमुपादिश ॥ २१ ॥

युधिष्ठिर उवाच

सर्वेषां द्रौपदी राजन्महिषी नो भविष्यति ।

एवं हि व्याहृतं पूर्वं मम मात्रा विद्यापते ॥ २२ ॥

अहं चाप्यनिविष्टो वै भीमसेनश्च पाण्डवः ।

पार्थेन विजिता चैषा रत्नभूता च ते सुता ॥ २३ ॥

एष नः समयो राजन्नस्य सहभोजनम् ।

न च तं हातुमिच्छामः समयं राजसत्तम ॥ २४ ॥

सर्वेषां धर्मेतः कृष्ण महिषी नो भविष्यति ।

आनुपूर्व्येण सर्वेषां गृह्णातु ज्वलने करम् ॥ २५ ॥

हुपद उवाच ।

एकस्य बह्व्यो विहिता महिष्यः कुरुनन्दन ।

नैकस्या बहवः पुंसो विधीयन्ते कदाचन ॥ २६ ॥

लोकवेदविरुद्धं त्वं नाधर्मं धार्मिकः शुचिः ।

कर्तुमर्हसि कौन्तेय कस्मात्ते बुद्धिरीदृशी ॥ २७ ॥

युधिष्ठिर उवाच ।

सूक्ष्मो धर्मो महाराज नास्य विद्मो वयं गतिम् ।

पूर्वेषामानुपूर्व्येण यातं वर्त्मानुयामहे ॥ २८ ॥

न मे बागश्रुतं प्राह नाधर्मे धीयते मतिः ।

एवं नैव वदत्यम्बा मम नैव मनोगतम् ॥ २९ ॥

एष धर्मो ध्रुवो राजंश्चरैरनमविचारयन् ।

मा च तेऽत्र विद्याद्वा भूत्कथंचिदपि पार्थिव ॥ ३० ॥

आदिपर्व पृ. २५३ (B. O. R. I. Edition).

Pāṇḍava brothers were perhaps driven out of their ancestral home in the Hindukush region. They combined with other Indian tribes to regain their lost kingdom. The eastern conquests of Cyrus may have also dislodged many royal families from Afghanistan and the Hindukush region, who may have regained their possession after the defeat of Cyrus.

(5) Cyrus-Tomyris story as given by Herodotus may have a faint echo in the insult of Draupadī by the Kuru prince in the *Mahābhārata*. The story of Tomyris' son being slain by Cyrus may recall the death of Abhimanyu in the Bhārata battle.

(6) The statement of Ctesias that Cyrus was mortally wounded by an Indian who hit him under the hip in the thigh recalls the fatal hit which Bhīma, according to the *Mahābhārata*, gave to Duryodhana below his thigh.<sup>18</sup> Like Cyrus, Duryodhana also seemed to have survived the fatal wound for a short time and arranged a revenge against this unmanly attack.

(7) In spite of the efforts in the *Mahābhārata* to glorify the Pāṇḍavas and to paint Duryodhana in dark colours, the epic here and there preserves the traditions of the might, the greatness and the goodness of the Kuru prince. In the Vanaparva when pressed by Draupadī and Bhīma to fight the Kauravas, Yudhiṣṭhira tells how impossible it was to fight Duryodhana, who by his affectionate, respectful, judicious and gentle behaviour has won the devotion of all the mighty warriors following him, who will therefore unflinchingly fight for him, and how his rule was firmly established over his vast domains, in the villages, towns, forests and even over the oceans.<sup>19</sup>

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सूत्या वञ्चयतो राजन्पुनरेवोत्पत्तिष्यतः ।  
उरुभ्यां प्राहिणोद्ग्राजन् गदां वेगेन पाण्डवः ॥ ४६ ॥  
सा वज्रनिष्पेषसमा प्रहिता भीमकर्मणा ।  
उरु दुर्योधनस्याथ बभञ्ज प्रियदर्शनौ ॥ ४७ ॥  
स पपात नरव्याघ्रो वसुधामनुनादयन् ।  
भमोरुभीमसेनेन पुत्रस्तव महीपते ॥ ४८ ॥  
शाल्यपर्व अ. ८५.

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ते सर्वे धृतराष्ट्रस्य पुत्रेण परिसान्त्विताः ।  
संविभक्ताश्च तुष्टाश्च गुरुवत्सेषु वर्तते ॥ ६ ॥  
सर्वयोधेषु चैवास्य सदा प्रीतिरनुत्तमा ।  
आचार्यो मनितास्तुष्टाः शान्तिं व्यबहरन्त्युत ॥ ७ ॥  
शक्तिं न हापयिष्यन्ति ते काले प्रतिपूजिताः ।  
अथ केयं मही कृत्स्ना दुर्योधनवशानुगा ॥ ८ ॥  
सप्रामनगरा पार्थ ससागरवनाकरा ।  
वनपर्व अ. ३७.

Later on in the Śalyaparva, being chafed by his adversaries for his avariciousness and bloodshed, when laid helpless being mortally wounded in his thighs, the Kuru prince with dignity replies that he had acquired great knowledge, had given gifts liberally and had righteously ruled his vast domains bounded by oceans. He always subdued his enemies. He had always enjoyed all the gifts of life so difficult for man, nay even for the gods. He now dies a heroic death on the battle-field. He and his followers are bound to attain heaven. The *Mahābhārata* then goes on to state that at the end of his speech flowers fell on him from heaven, the revered ones shouted acclamations. The whole earth was filled with a gentle and sweet breeze mingled with the songs of his glory sung by the celestial damsels. This divine adoration of the wise Kuru prince made his opponents feel small.<sup>20</sup>

The Sanskrit epic-poem *Kirātārjuniya* of Bhāravi, ascribed to about the fourth century A.D., also pictures Duryodhana, who ruled unrivalled the wide world encircled by oceans, as the very type of a righteous king, well versed in state-craft, ever performing his kingly duties, bestowing liberal

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#### दुर्योधन उवाच

अधीतं विधिवद्भूः प्रशास्ता ससागरा ॥  
 मूर्ध्नि स्थितमभिप्राणां को नु खन्ततरो मया ।  
 यदिष्टं क्षत्रबन्धूनां स्वधर्ममनुपदयताम् ॥ ५१ ॥  
 तदिदं निधनं प्राप्तं को नु खन्ततरो मया ।  
 देवार्हा मानुषा भोगाः प्राप्ता असुलभा नृपैः ॥  
 ऐश्वर्यं चोत्तमं प्राप्तं को नु खन्ततरो मया ।  
 समुद्रत्सानुगक्षैव स्वर्गं गन्ताहमच्युत ॥ ५३ ॥  
 यूयं निहतसङ्कल्पाः शोचन्तो वर्तयिष्यथ ।

#### सञ्जय उवाच

अस्य वाक्यस्य निधने कुरुराजस्य धीमतः ॥  
 अपतत्सुमहद्वर्षं पुष्पाणां पुण्यगन्धिनाम् ।  
 अवाद्यन्त गन्धर्वा वादित्रं सुमनोहरम् ॥ ५५ ॥  
 जगुश्चाप्सरसो राज्ञो यशः संबद्धमेव च ।  
 सिद्धाश्च मुमुक्षुर्वाचः साधु साध्विति पार्थिव ॥  
 ववौ च सुरभिर्वायुः पुण्यगन्धो मृदुः सुखः ।  
 व्यराजंश्च दिशः सर्वा नभो वैदूर्यसन्निभम् ॥  
 अत्यद्भुतानि ते दृष्ट्वा वासुदेवपुरोगमाः ।  
 दुर्योधनस्य पूजां तु दृष्ट्वा त्रीडामुपागमन् ॥ ५८ ॥

शाल्यपर्व अ. ६१.

gifts, winning the love and devotion of all, promptly subduing his enemies and ruling his kingdom with perfect justice and paternal care.

The brief but glorious tribute paid to the Kuru prince in the *Mahābhārata* referred to above, and the picture we get of him in the *Kirātārjunīya* recalls the account left by Xenophon of Cyrus the Great. He remarks that "Cyrus' empire was the greatest and most glorious of all the kingdoms in Asia. It was bounded on the east by the Indian Ocean, on the north by the Black Sea, on the west by Cyprus and Egypt, and the south by Ethiopia. And although it was of such magnitude, it was governed by the single will of Cyrus; and he honoured his subjects and cared for them as if they were his own children; and they, on their part, revered Cyrus as a father."<sup>21</sup> Xenophon makes Cyrus himself say, "When I was a boy, I think I plucked all the fruits that among boys count for the best; when I became a youth, I enjoyed what is accounted best among young men; and when I became a mature man, I had the best that man can have. And as time went on, it seemed to me that I recognised that my own strength was always increasing with my years...and so far as I know, there is nothing that I ever attempted or desired and yet failed to secure. Moreover, I have lived to see my friends, made prosperous and happy through my efforts and my enemies reduced by me to subjection."<sup>22</sup> "Who," Xenophon asks, "like Cyrus ever gained an empire by conquest, and even to his death was called 'father' by the people he had subdued?"<sup>23</sup>

If the surmise is correct that the nucleus of the Bhārata battle is the battle between the Indians and Cyrus, it may be asked where was this battle fought? If the tradition recorded by Alexander's historians that Cyrus actually invaded India and was worsened there be true, this battle may have been fought on the historic battle-field of Kurukṣetra near Pāṇipat. But the early Greek historians seem to indicate that the scene of this battle with Cyrus was laid in the Hindukush region on the north-western confines of India. The Greek historians mention an important town in this region known after Cyrus as Cyropolis. Cyropolis is the Greek equivalent of

<sup>21</sup> *Cyropædia*, VIII, viii, 1.

Xenophon (born C. 444 B.C.) was a Greek general, historian and philosopher. He took part in the Expedition of the younger Cyrus (401 B.C.). The account of this Expedition is contained in his *Anabasis*. In his work *Cyropædia* Xenophon gives an account of the life of Cyrus the Great, based, perhaps, on the Persian accounts. Xenophon does not mention the fight of Cyrus against the Massagætes. He makes him die in peace in his old age in his home province of Persia. The Persian accounts and following them Xenophon seem to have blurred over the sad defeat and death of their great hero.

<sup>22</sup> *Ibid.*, VIII, vii, 3 ff.

<sup>23</sup> *Ibid.*, VIII, ii, 9.

Kurukṣetra, Ptolemy calls this place as Kyreskhata,<sup>24</sup> and it lies in the Uṭṭarakuru region of the Sanskrit literature. The Bhārata battle was also, perhaps, fought in this region. The fact that the scenes of this battle in subsequent Indian literary traditions are associated with places in India is not surprising. We are quite familiar with the phenomenon of migration of cultures with the movement of the peoples. A people going to a new land give to the new places they occupy the old names with which they are familiar. In course of time by-gone events which took place in their original home-land get associated with these new places bearing the old names.

In the light of the conclusion that the *Mahābhārata* epic originally grew round the nucleus of the battle between Cyrus and the Indians we get a better historical perspective of the original setting of this great epic. The epic correctly preserves the traditions of a great destructive war amongst the cousins. The bifurcation of the Indian and the Iranian sections of the Āryans has not yet been so complete, and they had close blood relationships. This war, perhaps, marked an increasing gap between these two sections of the closely allied people. But then the Bhārata war was much more than a mere domestic quarrel amongst the cousins. It was a political event of the greatest significance. Under the inspiring guidance of Śrī Kṛṣṇa the eastern or the Indian sections of the Āryans combined themselves against the rising tide of the western or the Iranian section of the same people under Cyrus the Great. It was the first successful repulsion by India of the western encroachment on her liberties.

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<sup>24</sup> *Ancient India*, p. 276.

## THE VATSAGULMA BRANCH OF THE VĀKĀṬAKA DYNASTY

BY MAHĀMAHŌPĀDHYĀYA PROF. V. V. MIRASHI, M.A., Nagpur

AT the Calcutta session of the Indian History Congress, Mr. Y. K. Deshpande of Yeotmal brought to the notice of scholars a copper-plate inscription of the Vākāṭaka king Vindhyaśakti, which he had discovered at Bāsim in the Akola District of Berar. This inscription records the grant of a village which Vindhyaśakti made in his thirty-seventh regnal year. It gives the following genealogy of the donor:—

1. Pravarasena;
2. Sarvasena, son;
3. Vindhyaśakti, son.

In connection with Vindhyaśakti the inscription purports to state that he had performed the *Agniṣṭoma*, *Āptoryāma*, *Vājapeya*, *Jyotiṣṭoma*, *Bṛhaspatisava*, *Sādyaskra* and four *Aśvamedha* sacrifices. The genealogical portion of the record is written in Sanskrit and the formal portion in Prakrit. Like most other Vākāṭaka inscriptions, this record also is written in box-headed characters. As only one Vindhyaśakti is known to history, viz., he who is mentioned in the *Vāyu* and *Brahmāṇḍa Purāṇas*<sup>1</sup> and in the stone inscription<sup>2</sup> in Cave No. XVI at Ajaṇṭā, it was naturally supposed that the donor of the plates was identical with the celebrated founder of the Vākāṭaka dynasty. The use of the Prakrit language in a portion of the record lent colour to this identification, for all other known Vākāṭaka inscriptions—whether on stone or copper—are invariably in Sanskrit. The Bāsim plates were, therefore, supposed to carry the genealogy of the Vākāṭakas two generations before Vindhyaśakti. It is no wonder then that this discovery was hailed at Calcutta with great delight.

Dr. D. C. Sircar<sup>3</sup> has since then drawn attention to the faulty construction of the genealogical portion of this grant which seems to repeat the epithet *Dharma-Mahārāja* three times in connection with Vindhyaśakti. Besides, this grant credits Vindhyaśakti with the performance of almost the

<sup>1</sup> Pargiter, *Dynasties of the Kali Age*, pp. 48–50.

<sup>2</sup> For the latest edition of this inscription see *Archæological Survey of Western India*, Vol. IV, p. 124 ff.

<sup>3</sup> *Indian Historical Quarterly*, Vol. XVI, p. 182 ff.

same number of identical sacrifices<sup>4</sup> (including four *Aśvamedhas*) as those mentioned in connection with Pravarasena I in other Vākāṭaka land-grants. Again the characters of this grant closely resemble those of Pravarasena II's land-grants. Now Pravarasena II, who was the son of the daughter of Chandragupta II (*circa* 380–413 A.D.) must have flourished about the middle of the fifth century A.D. The Bāsim grant cannot therefore be as old as the third century A.D., when Vindhyaśakti, the celebrated founder of the Vākāṭaka dynasty, flourished. For these reasons Dr. Sircar has suggested that Vindhyaśakti who granted the Bāsim plates was the grandson of Pravarasena I and should therefore be called Vindhyaśakti II. He evidently belonged to a different branch of the Vākāṭaka family. As for the locality where this branch was ruling, Dr. Sircar has put forward two suggestions: Either these princes were ruling side by side with the main line, or Sarvadeva and Vindhyaśakti II were ruling between Pravarasena I and Rudrasena I.<sup>5</sup> He appears to favour the second view and suggests that Rudrasena I supplanted his cousin (Vindhyaśakti II) with the help of his maternal relatives, the Bhāraśivas.

Of the arguments advanced by Dr. Sircar to prove a later date for the Bāsim plates, that based on palæography is not quite convincing. The characters of the Bāsim plates, of course, bear close resemblance to those of Pravarasena II's grants, but it is possible to argue that these artificial characters may not have changed much during the 125 or 150 years which separated Pravarasena II from Vindhyaśakti; for we find that these characters have not undergone much alteration even during the time of Devasena and Hariṣeṇa who also were separated from Pravarasena II by some generations.<sup>6</sup> His other arguments based on the repetition of the epithet *Dharma-Mahārāja* and the attribution of the performance of identical sacrifices to both Vindhyaśakti and Pravarasena I have more force, though these mistakes can be ascribed to the carelessness or ignorance of the drafter of the record.<sup>7</sup> It is therefore necessary to adduce more evidence for

<sup>4</sup> Dr. Sircar says that the Bāsim plates mention Vājapeya and Jyotiṣṭoma in place of Ukthya, Śoḍaśin and Atirātra named in later records. This is not quite correct; for Vājapeya is mentioned in several records of Pravarasena II.

<sup>5</sup> Pravarasena I's son, Gautamiputra does not seem to have ascended the throne, for in later Vākāṭaka grants, the epithet *Vākāṭakānām Mahārāja* which invariably precedes the names of ruling kings is not prefixed to his name.

<sup>6</sup> This is according to the prevailing view of the Vākāṭaka genealogy, for which see Jayaswal's *History of India*, etc., p. 76.

<sup>7</sup> Similar mistakes are known to occur in other records. The Poona plates of Prabhāvatiguptā, for instance, ascribe to Chandragupta II the epithets *prithivyām-apratiratha* etc., which are usually applied to Samudragupta in the Gupta records. Similarly in the Bālāghāt plates of

(Continued on the next page)

proving the existence of this hitherto unknown branch of the Vākāṭaka family.

In this connection I draw the attention of scholars to the stone inscription in Cave No. XVI at Ajaṇṭā. This inscription has been edited thrice before, first by Dr. Bhau Daji with 'a tolerably accurate facsimile' in the *Journal of the Bombay Branch of the Royal Asiatic Society*, Vol. VII, pp. 53-74, then by Pandit Bhagwanlal Indraji in the *Inscriptions from the Cave-Temples of Western India*, pp. 69-73 and finally by Dr. Bühler in the *Archæological Survey of Western India*, Vol. IV, pp. 124-28. Dr. Bühler's transcript is accompanied by a lithograph of the record which had been prepared by Pandit Bhagwanlal.<sup>8</sup> This lithograph has been somewhat worked up by hand. As it is, it seems to show that the inscribed stone is quite smooth where the inscription is well preserved; but those who have visited Ajaṇṭā and seen the inscription *in situ* know that it is just the reverse. This lithograph must, therefore be used with caution and important readings of it must be verified from mechanical copies of the record. As I was suspicious about certain readings in the transcripts of Bhagwanlal and Bühler, I requested the Government Epigraphist for India to lend me a fresh estampage of the inscription. I am grateful to him for complying with my request and sending me an excellent estampage. I have also to thank Mr. G. Yazdani, M.A., O.B.E., Director of Archæology, Hyderabad State, for his kind permission to reproduce the estampage.

The Ajaṇṭā inscription is very much worn especially in the middle and on the left hand side, but Bhagwanlal has, with his wonted skill, transcribed all that could be deciphered in his days. I give below his transcript of the first nine lines of the record for ready reference:

- (१) उदीर्णलोकत्रयदोषवह्निनिर्व्वापने(णो).....  
.....प्रणम्य पूर्वा प्रवक्ष्ये क्षितिपानुपूर्वा [म] ॥
- (२) महाविमर्हैष्वभिदृष्टशक्तिः कुदस्सुरैरप्यनिवार्य[वीर्यः] [ । ]  
.....रणदानशक्तिः द्विज × प्रकाशो भुवि विन्ध्यशक्तिः [ ॥ ]
- (३) पुरन्दरेपेन्द्रसमप्रभावः स्वबाहुवीर्याजितस[र्व्वलोकः] [ । ]  
.....[यशो]शुकानां बभूव वाकाटकवंशकेतुः [ ॥ ]
- (४) रणे[षु] हर्ष्युत्थितरेणुजालसञ्छादितार्कः .....  
.....नरातीन्कृत्वा[भि]वाद्प्रवणाञ्चकार<sup>8a</sup> [ ॥ ]

(Continued from the last page.)

Prthivīśeṇa II, the Vākāṭaka Rudrasena II is called Mahārāja (of the family) of the Bhāraśivas, the name of the Bhāraśiva king Bhavanāga being omitted.

<sup>8</sup> See A. S. W. I., Vol. IV, Plate LVII.

<sup>8a</sup> The new estampage shows the reading to be प्रवणाञ्चकार as required by Sanskrit grammar.



- (५) [विनि]जितारि[स्सुर]राजकार्यक्षकार पुण्येषु परं प्रय[ञ्जं] [ ॥ ]  
 .....[१].....नरेन्द्रमौलिबिन्द्यस्तमणिकिरणलीढक्रमाम्बुजः
- (६) प्रवरसेनस्तस्य पुत्रोभूद्विकसन्नवेन्दीवरेक्षणरविमयूख .....  
 .....[रुद्र ? सेनः] प्रवरसेनस्य जितसर्वसेनस्सुतोभवत् [ १ ]
- (७) पार्थिवेन्द्रस्य [प्रशशास] धर्मेण मेदिनीम् कुन्तलेन्द्रवि .....  
 .....प्रवरसेनस्य पुत्रोभूत्प्रवरोजितोदारशासनप्रवर[ः] [ १ ]
- (८) .....[॥] तस्यात्मज ऽ कामत .....[ १ ]  
 .....भवाप्य राज्यमष्टाब्दको य ऽ प्रशशास सम्यक् [ ॥ ]
- [ ९ ] तस्यात्मजोभून्नरदेव .....भुवि देवसेन[ः] यस्योपभोगै-  
 ल्ललितैर्विपावनैर्वृन्देवराजस्य .....भूः [ ॥ ] पुण्यानुभावात्क्षितिपस्य

In his introduction to this inscription<sup>9</sup> Bhagwanlal gave the following list of the Vākāṭaka princes mentioned in it:—

1. Vindhyaśakti;
2. Pravarasena;
3. (Rudra ?) sena;
4. ....;
5. Devasena;
6. Hariṣeṇa.

He further remarked, 'From the broken state of the inscription it is not clear whether Pravarasena was a son of Vindhyaśakti, or, as is probable, of a member of the Vindhyaśakti family.<sup>10</sup> Of his son, only —*sena* is legible, preceded by a faintly traceable form like *dra*, so that the name may have been Bhadrasena, Chandrasena, Indrasena, Rudrasena, etc.' Bhagwanlal seems to have adopted the reading Rudrasena, because this name occurs soon after that of Pravarasena I in the Siwani and Chammak plates of the Vākāṭaka Pravarasena II, which had been discovered before. This list was next revised by Bühler in the introductory note to his transcript of the record in *A.S.W.I.*, Vol. IV, p. 128. Bühler thought that he could read, in the middle of line 7, the *aksharas pra* (or *pr*) *thivī* which showed a name like Pr̥thivīṣeṇa. As Rudrasena was mentioned in the immediately preceding line he identified this prince with Pr̥thivīṣeṇa, the son of Rudrasena I, mentioned in the Vākāṭaka land-grants. Again, he proposed to read further on in the same line, *Pravarasenas=tasya putro=bhūt* ..... in place of Bhagwanlal's *Pravarasenasya putro=bhūt* ..... and this Pravarasena he

<sup>9</sup> Burgess and Indrajī, "Inscriptions in the Cave-Temples of Western India," *A. S. W. I.*, p. 69.

<sup>10</sup> Scholars are now agreed that this Pravarasena was the son of Vindhyaśakti himself, for he is evidently identical with Pravira mentioned in the *Vāyu* and *Brahmaṇḍa Purāṇas* as the son of Vindhyaśakti. See Pargiter, *Dynasties*, etc., p. 50.

identified with Pravarasena II. According to him, therefore, the Vākāṭaka princes mentioned in the Ajaṇṭā inscription were as follows:—

1. Vindhyaśakti;
2. Pravarasena I, son (?);
3. (Ru) drasena I, son;
4. Pṛthivīṣeṇa, son;
5. Pravarasena II, son;
6. . . . . ., son;
7. Devasena, son;
8. Hariṣeṇa, son.

He also pointed out that the name of one prince, Rudrasena II, was omitted after Pṛthivīṣeṇa.

From the land-grants of Pravarasena II and Pṛthivīṣeṇa II, we get the following genealogy:—

1. Pravarasena I ;
2. (Gautamīputra,<sup>11</sup> son);
3. Rudrasena I, son;
4. Pṛthivīṣeṇa I, son;
5. Rudrasena II, son;
6. Pravarasena II, son;
7. Narendrasena, son;
8. Pṛthivīṣeṇa II, son.

If we compare this list with Bühler's revised genealogy of Vākāṭaka princes mentioned in the Ajaṇṭā inscription, two discrepancies in the latter at once strike us—(i) Rudrasena I was not the son of Pravarasena I, but was his grandson and (ii) Pravarasena II was not the son of Pṛthivīṣeṇa I, but was his grandson. Fortunately, the Ajaṇṭā inscription is quite clear in the portions which describe these relationships, so that there is not the least doubt about the readings. In the former case, the inscription reads (*Rudra ? senaḥ*) *Pravarasenasya jita-sarvva-senas=suto=bhavat* in line 6 and in the latter case, (*Pṛthivī ?*) *ṣeṇaḥ . . . . Pravarasenasya putro=bhūt=pravar-orjjit-odāra-śāsana-pravaraḥ* in line 7. We must therefore suppose that either the poet committed mistakes in describing these relationships or that some of the readings of the royal names given by Bhagwanlal and Bühler are incorrect. The former alternative does not appear likely, for the inscription was composed under the direction of the Vākāṭaka king Hariṣeṇa's minister and is on the whole very correctly written. It is, however, very much abridged in the portion where the names of Rudrasena and Pṛthivīṣeṇa

<sup>11</sup> He did not probably come to the throne. See above, note 5.

occur and consequently mistakes in reading are not unlikely. On referring to the excellent estampage supplied by the Government Epigraphist, I found that the reading *Rudrasenaḥ* in line 6 was extremely doubtful. Both Bhagwanlal and Bühler also were not quite certain about it, but Bhagwanlal thought that he saw a faintly traceable form like *dra*. He proposed to read *Rudrasenaḥ* evidently because Vākātaka land-grants mention a Rudrasena soon<sup>12</sup> after Pravarasena I. This reading was also adopted by Bühler. Referring to the lithograph used by both of them, I find that the upper member of the ligature is quite uncertain, but there appears a loop below it. This has evidently been taken to be the subscript *r* of *dra*. There are several instances of the subscript *r* in this lithograph, but in none of them is it denoted by a loop; it is always denoted by a hook open to the left. The estampage of the Government Epigraphist does not show even this loop. The preceding *akshara ru* is of course completely gone as admitted by both Bhagwanlal and Bühler. The reading *Rudrasenaḥ* is, therefore, to say the least, extremely doubtful.

Let us see if we could restore this royal name. The extant portion of this verse shows that the prince whose name is partially lost was a son of Pravarasena who has now been identified by all scholars with Pravarasena I. The Bāsim copper-plates suggest that he might be Sarvasena and the reading *Sarvasenaḥ* would suit the metre as well as *Rudrasenaḥ*. The latter part of the verse in line 6 would therefore read *Sarvasenaḥ Pravarasenasya jita-sarvva-senaḥ suto=bhavat*. The resulting *yamaka* makes this reading quite plausible. The poet who composed this Ajañṭā inscription was fond of using *yamakas* based on proper names<sup>13</sup> as will be seen from the following lines:—

Line 1—अभिवृद्धशक्तिः.....दानशक्तिः.....विन्ध्यशक्तिः ।

7—प्रवरसेनस्तस्य पुत्रोभूत्प्रवरोजितोदारशासनप्रवरः ।

10-11—हस्तिभोजः.....दिग्गन्धहस्तिप्रतिमो बभूव ।

14—हरिषेणो हरिविक्रमप्रतापः ।

The description *jita-sarvva-senaḥ* of this prince was evidently suggested by his name *Sarvasena*.<sup>14</sup> The Bāsim plates have now shown that Sarvasena was a son of one Pravarasena.<sup>15</sup> This Pravarasena, with whom the genealogy in the Bāsim plates begins, must therefore, be identified with Pravarasena I.

<sup>12</sup> They mention him as the grandson of Pravarasena I and the son of Gautamīputra.

<sup>13</sup> For another instance of the use of *yamakas* based on personal names, see the Nidhanpur plates of Bhāskaravarman, *Ep. Ind.*, Vol. XII, p. 65 ff.

<sup>14</sup> Otherwise there is no special point in saying that he conquered all armies. One would rather expect an expression like *jita-sarvva-lokaḥ* or *jita-sarvva-rājaḥ*.

<sup>15</sup> It is possible to read *Sarvasenaḥ* from the traces in the new estampage, but I prefer to rely for the reading *Sarvasenaḥ* on the wording of the description in l. 6.

In the middle of the next line (7) Bühler read the *aksharas pra* (or *pr*) *thivī* and thought that they formed part of the royal name *Pr̥thivīṣeṇa*. This prince he identified with *Pr̥thivīṣeṇa I*. Referring to the lithograph used by him I find that the *akshara* which he read as *thi* has a tapering top and is open below. It cannot therefore be read as *thi*, for in other places in this inscription *th* has invariably a round top and is closed at the bottom. See, for instance, *prathito* in line 15, *prathita-guṇ-opabhoga* in line 21, etc. The *akshara* appears to be *shrī* of which the lower curve representing *r* is indistinct in that lithograph.<sup>16</sup> The following *akshara* is clearly *vi*. In the Government Epigraphist's estampage I find traces of *dhya* following *vi*. Especially the elongated curve representing the subscript *y* is unmistakable. The two following *akṣharas* are almost certainly *senah*.<sup>17</sup> The name thus appears to be *Śrī-Vindhyasenaḥ*. This prince I identify with *Vindhyaśakti* of the Bāsim plates.

As regards the remaining names I am in complete agreement with Bühler. They are *Pravarasena*, *Devasena* and *Hariṣeṇa*. Between *Pravarasena* and *Devasena* we have lost the name of a prince who, according to the inscription, came to the throne when he was a boy only eight years old. I do not, however, agree with Bühler's view that this *Pravarasena* was *Pravarasena II* of whom several land-grants have come down to us. The names *Vindhyasena* (or, *Vindhyaśakti*) and *Sarvasena* of his father and grandfather respectively, show that he was different from *Pravarasena II*, the son of *Rudrasena II* and grandson of *Pr̥thivīṣeṇa I*.

The genealogy of this branch of the Vākāṭaka family can be stated as follows:—

1. *Vindhyaśakti I*;
2. *Pravarasena I*, son;
3. *Sarvasena*, son;
4. *Vindhyaśakti II* (or, *Vindhyasena*), son;
5. *Pravarasena II*, son;
6. (Name lost), son;
7. *Devasena*, son;
8. *Hariṣeṇa*, son.

We know from the *Purāṇas* that *Pravarasena I* had four sons who became kings. They apparently divided his extensive kingdom among themselves after his death. *Gautamīputra*, who was probably his eldest son, seems to have predeceased him. Therefore *Rudrasena I*, the son of *Gautamīputra*,

<sup>16</sup> Traces of the subscript *r* can be seen in the new estampage, and the medial vowel is certainly *i*.

<sup>17</sup> They were doubtfully read as *sheṇaḥ* by Dr. Bühler.

succeeded Pravarasena I. An inscription of this king has been discovered at Deotek<sup>18</sup> in the Chāndā District of the Central Provinces, not very far from Pauni where an ancient record of a king of the Bhāra clan (the later Bhāraśivas) has been found.<sup>19</sup> He may, therefore, have acquired by inheritance the territory of the Bhāraśivas also. The copper-plates of his great-grandson Pravarasena II record gifts of land at Chammak<sup>20</sup> near Ellichpur in the Amraoti District, Chandrapura<sup>21</sup> (modern Chandur) in the Wardhā District, Paṭṭan<sup>22</sup> in the Chhindwārā District, Tiroḍi<sup>23</sup> in the Bālāghāṭ District and Brahmapūraka<sup>24</sup> (modern Bāhmni) in the Bhaṇḍārā District. Pravarasena II was therefore ruling over the northern parts of modern Berar and the territory comprised in the Siwani, Chhindwārā, Bālāghāṭ, Nāgpur, Bhaṇḍārā, Wardhā and Chāndā Districts of the Central Provinces. We do not know how much of this territory was acquired by Pravarasena II or his immediate ancestors. But since the inscriptions of no other branch of the Vākāṭaka family have been found in these districts we may suppose that the whole of the aforementioned territory was under the rule of Rudrasena I also. His capital was probably Nandivardhana which is mentioned as the place of issue in the earliest copper-plates of this branch, viz., the Poona plates of Prabhāvatiguptā<sup>25</sup> and the Belorā plates of her son Pravarasena II.<sup>26</sup> Later on Pravarasena II founded Pravarapura and shifted his seat of government there.

Pr̥thivīṣeṇa II is the last known member of this branch. Scholars have long been in doubt about the relation of this Pr̥thivīṣeṇa with Devasena and Hariṣeṇa. S. Krishnaswami Aiyangar thought that the Vākāṭaka family branched forth after Pravarasena II, Narendrasena, the father of Pr̥thivīṣeṇa II, being a brother of the Vākāṭaka prince whose name is lost in the Ajaṇṭā inscription.<sup>27</sup> Jayaswal, on the other hand, identified Narendrasena with this latter prince.<sup>28</sup> The foregoing discussion will make it plain that the two branches had separated long before, i.e., after the reign of

<sup>18</sup> *Proceedings and Transactions of the Eighth Oriental Conference*, p. 613 ff.

<sup>19</sup> *Ep. Ind.*, Vol. XXIV, p. 11 ff.

<sup>20</sup> *Fleet, Gupta Inscriptions*, p. 235 ff.

<sup>21</sup> *Ep. Ind.*, Vol. III, p. 258 ff. ; Hiralal's *Inscriptions in C. P. and Berar* (seconded), p. 93.

<sup>22</sup> *Ibid.*, Vol. XXIII, p. 81 ff.

<sup>23</sup> *Ibid.*, Vol. XXII, p. 167, ff.

<sup>24</sup> *Gupta Inscriptions*, p. 243 ff. and *Nagpur University Journal*, No. 1, p. 3.

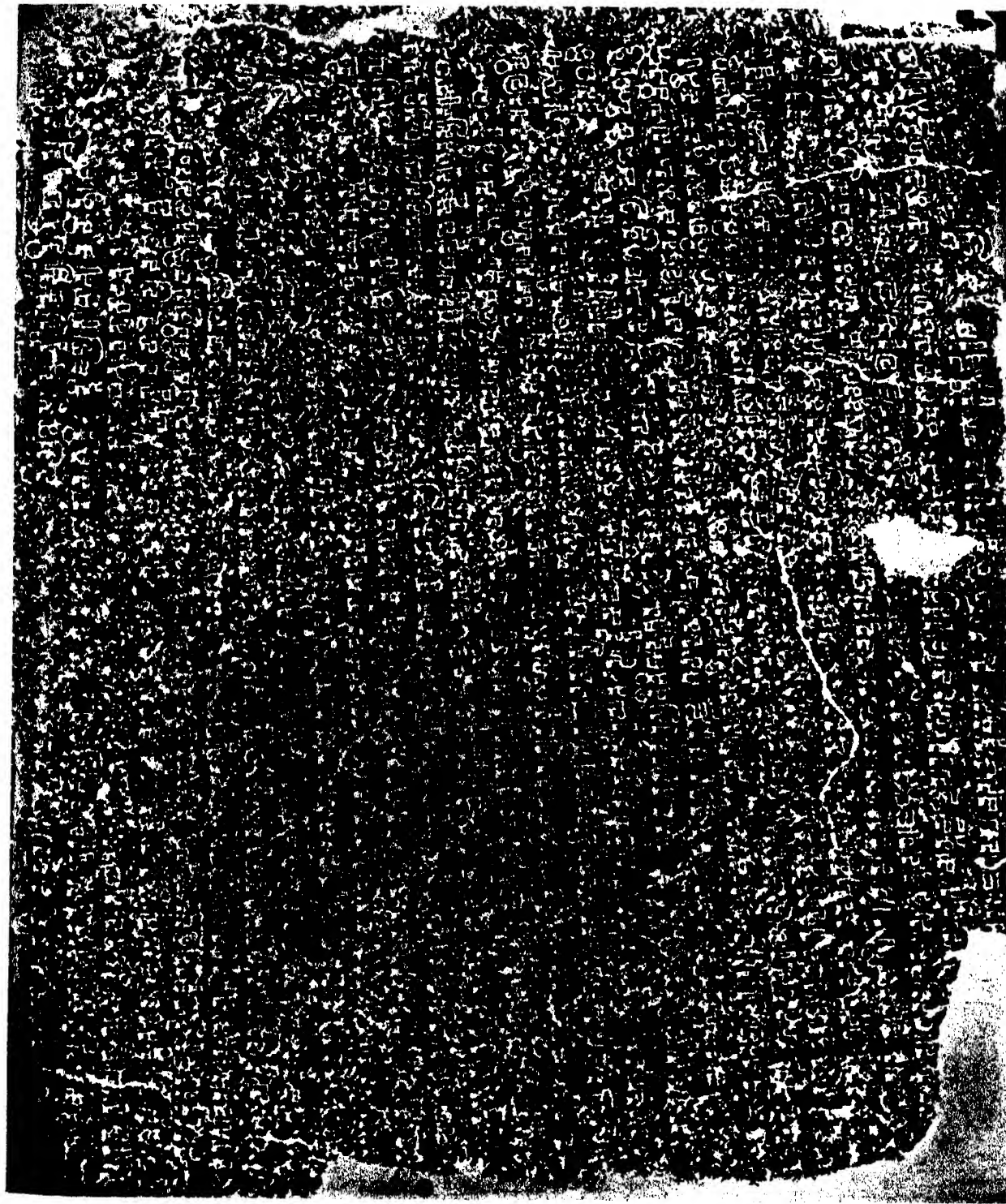
<sup>25</sup> *Ep. Ind.*, Vol. XV, p. 39 ff.

<sup>26</sup> *Ibid.*, Vol. XXIV, p. 260 ff.

<sup>27</sup> *Annals of the Bhandarkar Oriental Research Institute*, Vol. IV, p. 35.

<sup>28</sup> Jayaswal, *History of India, 150 A.D.-350 A.D.*, p. 76.

Vākāṭaka Inscription in Ajaṇṭā Cave No. XVI





Pravarasena I and that Devasena and Hariṣeṇa belonged to a different line from that of Narendrasena and Pṛthivīṣeṇa II.

Only five inscriptions of this second branch of the Vākāṭaka family have been discovered so far, viz., the Bāsim plates of Vindhyaśakti II, a fragmentary copper-plate inscription of Devasena<sup>29</sup> and three stone inscriptions of the reign of Hariṣeṇa discovered at or near Ajaṇṭā,—one of his feudatory in Cave No. XVII<sup>30</sup> and two of his minister Varāhadeva in Cave No. XVI<sup>31</sup> and the Ghaṭotkacha Cave<sup>32</sup> at Gulwādā, about 11 miles west of Ajaṇṭā. The provenance of these inscriptions shows that this branch ruled over southern Berar and the northern parts of the Nizam's Dominions. Both the known copper-plate inscriptions of this branch have been issued from Vatsagulma<sup>33</sup> which seems to have continued to be the seat of their government to the last.

According to the genealogy of the Vatsagulma branch fixed above, Vindhyaśakti II and his son Pravarasena II were the contemporaries of Pṛthivīṣeṇa I and his son Rudrasena II of the other branch. From the grants of Prabhāvatiguptā we know that Rudrasena II was the son-in-law of Chandragupta II (A.D. 380–413). He may therefore have come to the throne in *circa* A.D. 400.<sup>34</sup> This is also the approximate close of Vindhyaśakti II's reign. As we have seen, Vindhyaśakti II was the great-grandson of Vindhyaśakti I. In view of the abnormally long reigns<sup>35</sup> assigned in the *Purāṇas* to Vindhyaśakti I and Pravarasena I and the date, the thirty-seventh regnal year, of the Bāsim plates of Vindhyaśakti II, we shall not be wrong if we assign 150 years to the four reigns of Vindhyaśakti I, Pravarasena I, Sarvasena and Vindhyaśakti II. Vindhyaśakti I, the founder of the dynasty, seems therefore, to have risen to power about A.D. 250. Vindhyaśakti II was followed by four kings whose reigns must have covered about a century. We may therefore place Hariṣeṇa, the last of them, about A.D. 475–500.

<sup>29</sup> *New Ind. Antiquary*, Vol. II, p. 177 ff.

<sup>30</sup> *A. S. W. I.*, Vol. IV, p. 128 ff.

<sup>31</sup> *Loc. cit.*, p. 122 ff.

<sup>32</sup> *Loc. cit.*, p. 138 ff. The name of Varāhadeva is lost in this inscription, but line 16 refers to the sons apparently of Hastibhoja, the minister of the Vākāṭaka king Devasena mentioned in line 10 and Varāhadeva was probably one of them.

<sup>33</sup> This place is identical with Bāsim, see *New Ind. Ant.*, Vol. II, p. 721 ff.

<sup>34</sup> Vincent Smith places the marriage of Rudrasena II with Prabhāvatiguptā at the time of Chandragupta II's invasion against the Śaka Satraps of Gujarat and Saurāṣṭra 'somewhere about A.D. 395'.

<sup>35</sup> According to the *Purāṇas*, Vindhyaśakti ruled (or, perhaps lived) for 96 years and Pravarasena I for 60 years.



## DATE OF MAHĀVĪRA'S NIRVĀṆA

BY HIRALAL JAIN, M.A., LL.B.

THE last of the Twenty-four Jaina Tīrthaṃkaras or prophets was Mahāvīra Vardhamāna who was a contemporary of Gautama Buddha the founder of Buddhism. The date of Mahāvīra's Nirvāṇa, therefore, is very important for the chronology of ancient Indian History in general and of Jainism in particular. But, unfortunately, the date has not been so far fixed with accuracy, one of the reasons being that the old mentions of the date in Jaina literary traditions seem to be considerably at variance with one another. The purpose of this paper is briefly to draw attention to those mentions and to see if any explanation of their discrepancies is possible.

Amongst the Jains there is current an era called Vīra Nirvāṇa Samvat. It is believed to have started from the day of the Nirvāṇa of Mahāvīra which took place on the fourteenth day of the dark fortnight of the month Kārtika. The year 2466 of this era was completed on the 29th October 1940 A.D., and from the 30th October 1940 the Nirvāṇa year 2467 has begun. According to this, the Nirvāṇa of Mahāvīra took place 2467-1940 = 527 years before Christ, and 2467-1997 = 470 years before the beginning of the current Vikrama era.

Now the question is, when did Vikrama era begin? The Digambara *Nandi Saṃgha Paṭṭāvali* says:

सत्तरि-चउसद-युतो जिणकाला विक्रमो (-मस्त) हवइ जम्मो ।<sup>1</sup>

"Four hundred and seventy years after the Nirvāṇa of Mahāvīra was Vikrama born." According to this view the Vikrama era began with the birth of Vikrama which event took place 470 years after the Nirvāṇa of Mahāvīra.

But a number of other mentions make the Vikrama era begin, not from the birth of Vikrama, but from his coronation. For example, in the *Sthavirāvali* of Merutunga (13th-14th century) we find:

विक्रमरज्जारंभा पुरभो सिरि-वीर-णिब्बुई भणिया ।

सुन्न-मुणि-वेयज्जुत्तो विक्रमकालाउ जिणकालो ॥

"The Nirvāṇa of Vīra (Mahāvīra) is said to have taken place prior to the reign of Vikrama, and the difference between the Nirvāṇa era and the

<sup>1</sup> जैनसिद्धान्त भास्कर, १९१५; १, ४; पृष्ठ ७४.

Vikrama era is 470 years." Similarly, we find in the *Tapāgaccha Paṭṭāvali* (16th century):

तद्वाज्यं तु श्रीवीरात् सप्ततिवर्षशतचतुष्टये ४७० संजातम् ।

"His (Vikrama's) reign began 470 years after Vira (Nirvāṇa)." In the *Pāvāpurīkalpa* of Jinaprabha Sūri (13th-14th Century) we are told in the form of a prophecy made by the prophet himself:

महसुखखगमणाभो पालय-णंद-चंदगुप्ताहराईसु बोलंगेसु चउसय-सत्तरेहि बासेहि  
विक्रमाइचो राया होही ।

"After my attainment of salvation when Pālaka, Nanda, Candragupta and other kings would pass away, 470 years having elapsed, Vikramāditya would become king." Yet another work *Prabhāvakaṣarita* by Prabhācandra Sūri (13th century) says:

इतः श्रीविक्रमादित्यः शास्त्र्यवन्ती नराधिपः ।

अनृणां पृथिवी कुर्वन् प्रवर्तयति वत्सरम् ॥

"Henceforth king Vikramāditya would rule at Āvantī, and freeing the earth of its debt, would start an era."

These mentions clearly lay down that the Vikrama era began from the coronation of Vikrama and not from his birth, and since Vikrama is said to have ascended the throne at the age of 18 years, Mr. K. P. Jayaswal proposed that the Nirvāṇa of Mahāvīra should be understood to have taken place  $470 + 18 = 488$  years prior to the Vikrama era.<sup>2</sup>

Yet another view had arisen out of the mention by Hemacandra in his *Parīṣiṣṭa Parva* (12th century) as follows:

एवं च श्रीमहावीरमुक्तेर्वर्षशते गते ।

पंच-पंचाशदधिके चन्द्रगुप्तोऽभवन्नृपः ॥ (परि. ८, ३१९)

"Thus, after the lapse of 155 years after the salvation of Mahāvīra, Candragupta became king." Now, the period between Candragupta's coronation and Vikrama's coming to the throne is found to be 255 years, and therefore it was calculated that the real date of Vira Nirvāṇa is  $255 + 155 = 410$  years before Vikrama. This view was propounded by western scholars like Jacobi and Charpentier.

As against all these mentions there is quite a large number of references in Digambara Jaina works, older than the former, to the effect that the Vikrama era originated from the death of king Vikrama. In the *Darśana-sāra* of Devasena (10th century), for example, we find the following verses:

<sup>2</sup> Bihar and Orissa R.S.J., 1915.

छत्तीसे वरिससए विक्रमरायस्स मरणपत्तस्स ।

सोरट्टे षलहीए उप्पणो सेवडो संघो ॥ ११ ॥

\* \* \* \*

पंचसए छव्वीसे विक्रमरायस्स मरणपत्तस्स ।

दक्खिणमहुराजादो दाविडसंघो महामोहो ॥ २८ ॥

\* \* \* \*

सत्तसए तेवण्णे विक्रमरायस्स मरणपत्तस्स ।

णंदियडे वरगामे कट्टो संघो मुणेरव्वो ॥ ३८ ॥

In these verses we find mention of dates in terms of the Vikrama era for important events in the history of Jainism. In the first verse we are told that the Śvetāmbara sect originated in Saurāṣṭra at Valabhī 136 years after the death of Vikrama. In the second verse the Drāviḍa Saṃgha is said to have originated at Southern Mathurā (Madura) 526 years after the death of Vikrama, and the third verse records the origin of Kāṣṭhā Saṃgha at Nanditaṭa village 753 years after the death of king Vikrama. Similarly, Vāmadeva in his *Bhāvasaṃgraha* records the time of the origin of the Śvetāmbara sect as follows:

सषट्त्रिंशे शतेऽब्दानां मृते विक्रमराजनि ।

सौराष्ट्रे वल्लभीपुर्यामभूत्तत्कथ्यते सया ॥

“136 years after the death of Vikrama, what happened in Saurāṣṭra at Valabhī, that I declare here.” Amitagati also in his *Subhāṣita-ratna-sandoha* records the time of the completion of his book in the following words:

समाहूढे पूतत्रिदशवसतिं विक्रमनृपे

सहस्रे वर्षाणां प्रभवति हि पंचाशदधिके ।

समाप्तं पंचम्यामवति धरिणीं मुंजनृपतौ

सिते पक्षे पौषे बुधहितमिदं शास्त्रमनघम् ॥

“When King Vikrama had ascended the holy heavens 1050 years, then on the 5th day of the bright fortnight of the month of Pauṣa did I complete this faultless sacred book for the benefit of the wise, when king Munja was safeguarding the earth.” Ratnanandi also, in his *Bhadrabāhu-ṇarita*, records a date as follows:

मृते विक्रमभूपाले सप्तविंशतिसंयुते ।

दशपंचशतेऽब्दानामतीते ऋणुतापरम् ॥ १५७ ॥

“When king Vikrama had died, 1527 years after that, what happened, listen.”

These mentions are quite enough to show that right from the 10th to the 16th century, the Vikrama era was believed by writers to have originated from the death of Vikrama, and not from his birth or coronation. The

previous two eras, namely of Mahāvīra and of Buddha, were also associated with the death of the persons commemorated by them. It may, therefore, be inferred that the period of 470 years is from the Nirvāṇa of Mahāvīra to the death of king Vikrama. Vikrama's reign, according to Merutunga's *Viçāraśreṇī*, was sixty years (विक्रमस्य राज्यं ६० वर्षाणि). If we deduct these sixty years from the period of 470 years, we get 410 years as the period from Mahāvīra's Nirvāṇa to Vikrama's coronation.

There now remains the question of the discrepancy in the mentions of the period that elapsed from the Nirvāṇa of Mahāvīra to Candragupta's coronation. The old traditional verses that record the details of the period are as follows<sup>3</sup>:

जं रयणि कालगओ अरिहा तिथंकरो महावीरो ।  
 तं रयणि अवणिवई अहिंसितो पालओ राया ॥ १ ॥  
 सट्ठी पालयरणो पणवणसयं तु होइ णंदाणं ।  
 अट्ठसयं मुरियाणं तीस च्चिअ पूसमित्तस्स ॥ २ ॥  
 बलमित्त-भाणुमिता सट्ठी वरिसाणि चत्त णववाणे ।  
 तह गह्मिन्नरज्जं तेरस वरिस सगस्स चउ वरिसा ॥ ३ ॥

These verses lay down the duration of reigns of kings and dynasties in succession exactly from the day of Mahāvīra's Nirvāṇa to Vikrama's coronation as follows:

	Years
Pālaka . . . . .	60
Nandas . . . . .	155
Mauryas . . . . .	108
Puṣyamitra . . . . .	30
Balamitra and Bhānumitra . . . . .	60
Nahapāna . . . . .	40
Gardhabhilla . . . . .	13
Śaka . . . . .	4
	<hr/> 470

It may be argued that these kings and dynasties may not be successive, but, in some cases, contemporary, because, for example, Pālaka ruled at Ujjain while the Nandas ruled in Magadha at Pāṭaliputra. We are, however, told that Pālaka had taken possession of Pāṭaliputra as well, when Udayin died heirless:

<sup>3</sup> तपागच्छ पट्टावली ; विचारश्रेणी of मेरुतुंग (with some verbal variants).

सिरिजिण-गिन्वाण-गमण-रयणीए उज्जेणीए चंडपज्जोअ-मरणे पालओ राया आहिसित्तो । तेण य अपुत्त-उदाइ-मरणे कोणिअ-रज्जं पाडलिपुरं पि अहिट्ठिअं<sup>4</sup>

According to this order and periods of kings and dynasties the period from Mahāvīra's Nirvāṇa to Candragupta's coronation is  $60 + 155 = 215$  years. But according to Hemaçandra, as mentioned before, this period is only 155 years. This discrepancy of 60 years was noticed by the ancient chronicler Merutunga who remarks in his *Viçāraśreṇi* as follows:

यच्च परिशिष्ट-पर्वण्युक्तम् 'एवंच श्रीमहावीर....' तच्चिन्त्यम् यतः एवं ६० वर्षाणि श्रुद्यन्ति, अन्यग्रन्थैः सह विरोधश्च ।<sup>5</sup>

"In *Parīṣiṣṭa Parva* the period recorded from the Nirvāṇa of Mahāvīra to Candragupta's coronation is 155 years. But this falls short by 60 years, and thus it is in conflict with the mentions in other books." The discrepancy is, however, explainable when we take into consideration another verse of *Parīṣiṣṭa Parva* which is as follows:

अनन्तरं वर्द्धमानस्वामिनिर्वाण-वासरात् ।

गतायां षष्ठिवत्सर्गामेष नन्दोऽभवन्नृपः ॥

(परि. ६, २४३.)

Here we are told that Nanda became king sixty years after the Nirvāṇa of Mahāvīra. The same we find mentioned in the succession list reproduced above. It, therefore, appears that what Hemaçandra has recorded is correct, that is to say, the period from Mahāvīra's Nirvāṇa to the beginning of the Nanda dynasty was 60 years and that from Mahāvīra's Nirvāṇa to Candragupta's coronation was 155 years. Other writers seem to have confused this and taken these two periods successively, instead of including the the period before the Nandas within 155 years. The period of the Nandas would really work out as  $155 - 60 = 95$  years which is almost in agreement with the Paurāṇic record of a hundred years for the Nandas:

उद्धरिष्यति तान् सर्वान् कौटिल्यो वै द्विजर्षभः ।

भुक्त्वा महीं वर्षशतं नरेन्द्रः स भविष्यति ॥

महाण्ड पु. ३, ७४, १४३.

All the Jaina traditions, thus, boil down to this that there were 155 years from Mahāvīra's Nirvāṇa to Candragupta's coronation,  $155 + 108 + 30 + 60 + 40 + 13 + 4 = 410$  years upto Vikrama's coronation, and  $410 + 60 = 470$  upto Vikrama's death, and that the Vikrama era began with the death of Vikrama.

<sup>4</sup> सिरिदुसमाकाल-समणसंघययं-अवचूरि (पट्टावलीसमुच्चय, पृ. १७).

<sup>5</sup> जैनसाहित्य संशोधक, २, ४.

## A FURTHER NOTE ON THE VARIETIES OF THE ANUṢṬUBH METRE

BY S. P. CHATURVEDI

IN my paper, 'The *Anuṣṭubh* metre—its history and varieties' published in the *Nagpur University Journal* (= *N. U. J.*), Vol. II (1936), I have written in detail on the history of the *Anuṣṭubh* metre in the different periods of Sanskrit literature, its treatment in the works on Sanskrit prosody and the observance or otherwise of its restrictions by the famous poets and dramatists of the classical period. The main purpose in writing the present note is to indicate the exact number and types of its current varieties (both standard and exceptional) and the restrictions and laws governing them, and thus to show the scope of the metre *more* precisely.

The historical *Anuṣṭubh* allows freedom as regards the first four syllables of a quarter (*Pāda*), but imposes certain restrictions as regards the last four syllables. Its standardized variety (called *Śloka* or *Padya*) is defined thus:

- (a) पञ्चमं लघु सर्वत्र, सप्तमं द्विचतुर्थयोः ।  
गुरु षष्ठं च जानीयात्, शेषेष्वनियमो मतः ॥  
छन्दोमञ्जरी (v—6)
- (b) षष्ठे षष्ठं गुरु ज्ञेयं सर्वत्र लघु पञ्चमम् ।  
द्विचतुष्पादयोर्ह्रस्वं सप्तमं दीर्घमन्ययोः ॥
- (c) पञ्चमं लघु सर्वत्र सप्तमं द्विचतुर्थयोः ।  
षष्ठं गुरु विजानीयात् एतत्पद्यस्य लक्षणम् ॥  
श्रुतबोध (10-11 Stanzas)

The fifth syllable is always short, the sixth is always long and the seventh syllable is long in odd (*viṣama*) quarters and short in even (*sama*) quarters. But we have shown<sup>1</sup> that each of these restrictions has been singly or jointly violated by the classical poets and that departure from that standardized form is not rare. Consequently the exceptional varieties of the metre have obtained the same acceptance among Sanskrit poets as the standardized variety. The definition, then, of the historical *Anuṣṭubh* (*Śloka* or *Padya*) as given by the prosodists is rather loose and vague, and should therefore be reconstructed. A close scrutiny of its various current varieties enables us, as we shall show, to define the metre and its varieties more precisely.

<sup>1</sup> See *N. U. J.*, Vol. II, p. 66-7.

To begin with, we shall take up the odd lines first and try to find out the conditions which govern the odd lines of the metre.

- (A) The first syllable is indifferent, *i.e.*, it may be short or long.
- (B) The second and third syllables cannot *both* be short.<sup>2</sup> That is, if the second syllable is short, the third must be long; or if the third is short, the second must be long. In other words the first *three* syllables cannot form a ञगण (III) or भगण (SII).
- (C) The fourth syllable may be short or long in the standard form of the metre, but in exceptional varieties of the metre (to be mentioned later on), the fourth syllable *must* be long.
- (D) As regards the 5th, 6th and 7th syllables, we have seen above that in the standard form of the metre they *must* form a ञगण (ISS), for the 5th should be short and the 6th and 7th syllables should be long.

But as detailed on pp. 67 and 70 of *N. U. J.*, Vol. II, there are exceptions to this normal form, and that other गणस (besides ञगण) are permitted in the combination of the 5th, 6th and 7th syllables.<sup>3</sup> Now let us see which are these other permissible गणस (combinations). We shall adopt the method of elimination. A close perusal of the data<sup>4</sup> will show that the combination cannot be a जगण (ISI), for if the 5th and 6th syllables conform to the standard, the 7th also does the same and consequently it cannot be short to make a जगण (ISI). Nor can the combination be a सगण (IIS), for if the 6th syllable makes departure from the normal the 7th syllable also does the same and consequently it cannot be long to form a सगण (IIS).<sup>5</sup> The combination cannot be a तगण (SSI) either, for in no case of the exceptional examples (referred to above) we find the 5th and 7th syllables violating the rule and the 6th syllable observing it simultaneously. Thus, जगण (ISI), सगण (IIS) and तगण (SSI) being eliminated, we are left with the remaining four permissible combinations in the exceptional

<sup>2</sup> See p. 65, *ibid.*

<sup>3</sup> I am glad to record the keen interest of Mr. E. N. Bannerjee, Professor of Mathematics in D.A.V. College, Cawnpore, in not only appreciating the contents of my paper referred to above but also writing a note on the subject (*The College Magazine*, 1939). His mathematical calculation of the varieties has been of much help to me.

<sup>4</sup> See pp. 69-70, *ibid.*

<sup>5</sup> For the only exception (*Kumāra Sambhava*, X, 34), see the footnote No. 25 on page 66, *ibid.*

varieties of the metre. But in all these exceptional varieties the preceding (*i.e.*, the fourth) syllable must be long.

To put briefly, the normal form of the metre has a यगण (ISS) combination for the 5th, 6th and 7th syllables, and the current exceptional varieties have *any one* of the four combinations भगण (SII), रगण (SIS), मगण (SSS) and नगण (III), with the 4th syllable always long. In all, therefore, there are five permissible types of the metre (one normal and four exceptional varieties).

(E) The eighth syllable is technically long in pronunciation, even though short in writing. Thus, speaking materially, it does not effect the number of varieties of the metre.

Now we shall take up by turn each of the five permissible above mentioned (under D) types and try to determine the exact number of permissible varieties under each type.

I. यगण (ISS) type in the 5th, 6th and 7th syllables.—In this normal form of the metre, the quantity of the last four syllables being fixed, variations are possible in the quantity of the first four syllables only. Now, the *first three* syllables cannot form a भगण (SII) or a नगण (III)—*vide* (B) above, where it has been shown that the second and third syllables cannot *both* be short. Thus we are left with the remaining six गणः (जगण, सगण, यगण, रगण, तगण and मगण) as the possible combinations of the first three syllables. There are thus, six varieties of this type. And since in each of these six varieties, the fourth syllable may be short or long, we have in all 12 varieties of this type:

- |          |         |          |          |           |                         |
|----------|---------|----------|----------|-----------|-------------------------|
| 1. जल्यग | 2. जगयग | 3. सल्यग | 4. सगयग  | 5. यल्यग  | 6. यगयग                 |
| 7. रल्यग | 8. रगयग | 9. तल्यग | 10. तगयग | 11. मल्यग | 12. मगयग <sup>6</sup> . |

[In these designations the first letter refers to the combination of the 1st, 2nd and 3rd syllables; the second letter ल or ग indicates whether the 4th syllable is short or long; the third letter shows the type of the combination of the 5th, 6th and 7th syllables, and the fourth letter indicates the quantity of the 8th syllable.]

II. भगण (SII) type in the 5th, 6th and 7th syllables with the 4th syllable always long.—In this type also, as in the above यगण type, the first three syllables must form *one* of the six गणः (भगण and नगण being impossible). And as the 4th syllable must be long, we have only six varieties of this type:

- |         |         |                        |
|---------|---------|------------------------|
| 1. यगभग | 2. रगभग | 3. तगभग                |
| 4. जगभग | 5. सगभग | 6. मगभग <sup>6</sup> . |

<sup>6</sup> For illustrations, see the appendix in the end.



III. रगण (SIS) type in the 5th, 6th and 7th syllables, with the 4th syllable always long.—Here also, we have six varieties as in the above :

- |         |         |                       |
|---------|---------|-----------------------|
| 1. यगरग | 2. रगरग | 3. तगरग               |
| 4. जगरग | 5. सगरग | 6. मगरग. <sup>6</sup> |

IV. नगण (III) type in the 5th, 6th and 7th syllables with the 4th syllable always long.—In this type also, as in above, we have six varieties :

- |         |         |                       |
|---------|---------|-----------------------|
| 1. यगनग | 2. रगनग | 3. तगनग               |
| 4. जगनग | 5. सगनग | 6. मगनग. <sup>6</sup> |

V. मगण (SSS) type in the 5th, 6th and 7th syllables with the 4th syllable always long.—In this type the last four syllables are all long, and the fourth syllable being always long, the 2nd, 3rd and 4th syllables must form a रगण (SIS) [यगण (ISS) being not demonstrable]. So the only option is about the 1st syllable, which may be short or long. Thus we have only two varieties of this type :

- |         |                       |
|---------|-----------------------|
| 1. करमग | 2. गरमग. <sup>6</sup> |
|---------|-----------------------|

To conclude our consideration of the odd quarters, we have 12 varieties of the standard (यगण ISS) type and 20 varieties of the exceptional types [भगण (SII), रगण (SIS) and नगण (III) types (having six varieties each) and the मगण type, 2 varieties; thus  $6 + 6 + 6 + 2 = 20$ ].<sup>6</sup>

Now we will consider even (*sama*) quarters. About the last four syllables of an even quarter, it has already been pointed out<sup>7</sup> that "the even quarters always have the last four syllables alternately short and long (as IS IS). That is, the *sama-pādas* always conform to the restrictions of the *śloka* metre." In other words, the 5th, 6th and 7th syllables form a जगण (ISI) the standard combination for even quarters. It is only in the first four syllables that we have varieties.

In even quarters also, the 2nd and 3rd syllables cannot both be short as we have seen above in the case of odd quarters. As the 3rd and 4th syllables cannot be short and long (लगा IS) respectively, it is clear that the 2nd, 3rd and 4th syllables cannot form a रगण (SIS), सगण (IIS) or नगण (III). We have therefore only the five remaining गणस [भगण (SII), जगण (ISI), यगण (ISS), तगण (SSI) and मगण (SSS)] as the permissible combinations of the 2nd, 3rd and 4th syllables. And as the 1st syllable may be short or long, we have, in all, ten varieties of an *even* quarter.

- |         |         |         |         |                        |
|---------|---------|---------|---------|------------------------|
| 1. लभजग | 2. गभजग | 3. लजजग | 4. गजजग | 5. लयजग                |
| 6. गयजग | 7. लतजग | 8. गतजग | 9. लमजग | 10. गमजग. <sup>8</sup> |

<sup>7</sup> See page 65, *ibid*.

<sup>8</sup> For illustrations, see the appendix in the end.

The above detailed description of the current varieties of the standard and exceptional types of the historical *Anuṣṭubh* would clearly show that its traditional definition<sup>9</sup> falls too short of the requirement. It is incomplete, incorrect and indefinite. Its only merit is that it is short and describes fully the famous stanza (of Vālmiki) said to be the first *Anuṣṭubh* stanza in the classical literature.<sup>10</sup> It records correctly the quantity of the last four syllables of that particular stanza, but says nothing about the same of the first four syllables of which we have as many as three varieties in the same stanza.<sup>11</sup> We give therefore below in Sanskrit verses a comprehensive definition of all the current and permissible varieties—standard and exceptional both—with an explanatory Sanskrit commentary. All these varieties have been illustrated in an appendix in the end.

It should be noted that in selecting the illustrations, the *earliest occurring* quarters have been chosen as samples from the following works in the *order of preference*; the *Raghuvamśa*, the *Kumārasambhava*, the *Śiśupālavadha*, and the *Mahāvīracharita*. Other works of the respective authors are not represented in the appendix, as they do not use additional varieties.

#### सामान्यस्वरूपम्

वाल्मीकिकविना लोके, छन्दस्यस्मिन्प्रचारिते ।

अष्टाक्षरीयचरणाः, चत्वारः सन्त्यनुष्टुभिः ॥

[आदिकविवाल्मीकिना लौकिकसंस्कृतवाङ्मये प्रचारिते—वैदिकसंस्कृते तु शिथिलबन्धमिदं छन्दः ऋग्वेदकालादेव दृश्यते—अनुष्टुभिः छन्दसि अष्टाक्षरात्मकाः चत्वारः पादा भवन्ति ।]

#### समपादभेदाः

द्विचतुष्पादयोरन्ते जगौ ज्ञेयौ सुनिश्चितम् ।

‘भ ज या त म’ मध्यान्तु गणो यस्मात्प्रदृश्यते ॥

द्वित्रित्युर्वाक्षरेष्वेकः, तस्मात्पञ्चविधा हि तौ ।

आद्यस्य लत्वे गवे वा द्वित्वाद्भेदा दश स्मृताः ॥

[तस्यानुष्टुभः समपादयोर्द्वितीयचतुर्थचरणयोः अन्ते पञ्चमषष्ठसप्तमाष्टमाक्षरसमूहे जगणो (SII) गुरुश्च भवति सर्वत्र निश्चयेन । द्वितीयतृतीयचतुर्थाक्षरसमूहे तु भगण (SII) जगण (ISI) यगण (ISS) तगण (SSI) मगणानां (SSS) मध्यादेकः कश्चन गणो दृश्यते । एवं च समपादे पञ्चगणैवकल्प्येन पञ्चभेदाः, तत्रापि प्रथमाक्षरो लघुर्गुरुर्वा भवितुमर्हतीति हेतोः, पञ्चविधस्य समपादस्य द्विगुणीकरणात् साकल्येन दशभेदा भवन्ति ।]

<sup>9</sup> See its definition above.

<sup>10</sup> See page 62, *ibid*.

<sup>11</sup> सानिषाद् प्रतिष्ठा त्वम् is रगयग variety of odd quarters.

अगमः शाश्वतीः समाः is लयजग variety of even quarters.

यत्कौचमिथुनादेकम् is तलयग variety of odd quarters.

अवधीः काममोहितम् is लयजग variety of even quarters.

### विषमपादभेदाः

एकत्रिपादयोरेवं भेदसंख्या प्रतीयताम् ।  
 पञ्चषट्सप्तवर्णानां समूहे परिदृश्यते  
 'भ य रा म न' मध्यात्तु गण एकः सुनिश्चितम् ॥  
 तस्मात्पञ्चविधावैतौ पादौ नु विषमौ मतौ  
 एकैकशो विचारोऽस्य भेदानां क्रियतेऽधुना ।

[अस्यानुष्टुभो विषमपादयोः प्रथमतृतीयचरणयोः भेदसंख्या निम्नलिखितप्रकारेण ज्ञेया । तत्र पञ्चमषट्सप्तवर्णानां समूहे भगण (SII) यगण (ISS) रगण (SIS) मगण (SSS) नगणानां (III) मध्यात् एकः कश्चन गणो निश्चयेन दृश्यते । तस्मात् विषमपादः प्रथमं पञ्चविधो भवति । इदानीं प्रत्येकविधस्य विषमपादस्य विभिन्नभेदानां विचारः क्रमेण क्रियते ।]

#### (१) भगणीयविषमपादभेदाः

पञ्चषट्सप्तवर्णेषु भगणे सति दृश्यते  
 'ज स या र त मा'नां तु एक आद्याक्षरत्रयी ।  
 सदागुरुस्तूर्यवर्णोऽतः षड् भेदाः प्रकीर्तिताः ॥

[भगणीयविषमपादे अर्थात् यत्र पञ्चमषट्सप्तवर्णानां समूहे भगणो (SII) दृश्यते तथाविध विषमपादे प्रथमद्वितीयतृतीयाक्षरसमूहे जगण (ISI) सगण (IIS) यगण (ISS) रगण (SIS) तगण (SSI) मगणानां (SSS) मध्यात् एकः कश्चन गणो निश्चयेन दृश्यते । चतुर्थवर्णस्तु सर्वदा गुरुव भवति । तस्मात् आद्याक्षरत्रये गणषट्कवैकल्पेन भगणीय-विषमपादस्य षड् भेदा भवन्ति ।]

#### (२) यगणीयविषमपादभेदाः

पञ्चषट्सप्तवर्णेषु यगणे सति दृश्यते  
 'ज स या र त मा'नां तु एक आद्याक्षरत्रयी ।  
 ततो भवन्ति षड्भेदाः—यगणीयविमर्शने—  
 तूर्यस्य लत्वे गत्वे वा भेदा द्वादश द्वित्वतः ।

[यगणीयविषमपादेऽपि भगणीयविषमपादवत् आद्याक्षरत्रय्यां जगण (ISI) सगण (IIS) यगण (ISS) रगण (SIS) तगण (SSI) मगणानां (SSS) वैकल्पेन षड्भेदा भवन्ति । किन्त्वत्र चतुर्धाक्षरो लघुर्गुरुवा भवितुमर्हतीति षड्विधस्य यगणीयविषमपादस्य द्विगुणीकरणात् साकल्येन द्वादश भेदा भवन्ति ।]

श्लोकपद्याङ्ग्यं वृत्तं छन्दोविद्भिः सुसंज्ञितम् ।  
 एतद्द्वादशभेदेषु सुतरां परिदृश्यते ॥  
 अतोऽन्ये विषमाः पादा अपवादस्वरूपिणः ।

[छन्दःशास्त्रग्रन्थेषु श्लोकपद्यान्यतराभिधस्य अनुष्टुप्छन्दसो यत् "पञ्चमं लघु सर्वत्र, सप्तमं द्विचतुर्थयोः । षष्ठं गुरु विजानीयात्" इत्यादि लक्षणं दृश्यते, तस्योदाहरणस्वरूपा इमे यगणीय-विषमपादस्य द्वादश भेदाः सन्ति । अन्ये (उक्ता वक्ष्यमाणाश्च) भगणीयादिविषमपादभेदास्तु निर्दिष्टलक्षणं नानुसरन्तीति तदपवादस्वरूपिणो ज्ञेयाः ।]

(३) रगणीयविषमपादभेदाः

पञ्चषट्सप्तवर्णेषु रगणे सति दृश्यते

‘ज स या र त मा’ नां तु एक आद्याक्षरत्रयी ।

सदागुरुस्तूर्यवर्णः, भेदास्तस्मात् स्मृताः षट् ।

[रगणीयविषमपादे भगणीयविषमपादवत् आद्याक्षरत्रय्यां जगणादिगणषट्कैकल्प्येन षड्भेदा भवन्ति । चतुर्थवर्णस्तु सर्वदा गुरुर्भवति ।]

(४) मगणीयविषमपादभेदाः

पञ्चषट्सप्तवर्णेषु मगणे सति दृश्यते ।

एक एव गणो नूनं द्वित्रितूर्याक्षरेषु ‘रः’ ॥

आद्यस्य लत्वे गत्वे वा द्वौ भेदौ परिकीर्तितौ ।

[मगणीयविषमपादे द्वितीयतृतीयचतुर्थाक्षरसमूहे एक एव गणः रगणः (SIS) सर्वदा दृश्यते । प्रथमाक्षरस्तु लघुर्गुरुर्वा भवितुमर्हतीति भगणीयविषमपादस्य द्वौ भेदौ भवतः ।]

(५) नगणीयविषमपादभेदाः

पञ्चषट्सप्तवर्णेषु नगणे सति दृश्यते ।

‘ज स या र त मा’ नां तु एक आद्याक्षरत्रयी

सदागुरुस्तूर्यवर्णः, भेदास्तस्मात्स्मृताः षट् ।

[नगणीयविषमपादेऽपि भगणीयविषमपादवत् आद्याक्षरत्रय्यां जगणादिगणषट्कैकल्प्येन षड्भेदा भवन्ति । चतुर्थवर्णस्तु गुरुरेव भवति ।]

उपसंहारः

एवं विंशतिभेदा वै, अपवादस्वरूपिणः

विषमस्य हि पादस्य दृश्यन्ते सुविचारतः ।

[एवं सूक्ष्मविचारे कृते अपवादरूपाणां भगणीय-रगणीय-मगणीय-नगणीयविषमपादानां साकल्प्येन (षट् + षट् + द्वौ + षट्) विंशतिर्भेदा दृश्यन्ते ।]

भेदा दश समे पादे द्वात्रिंशद् विषमे मताः ।

ज्ञायतां भेदसंख्यैवं प्रकाराणामनुष्टुभः ॥

[एवं रीत्या अनुष्टुप्छन्दसः समे पादे दश भेदाः विषमे पादे द्वात्रिंशत् (१२ लक्षणानुसारम् + २० अपवादरूपाः) भेदाः दृश्यन्ते ।]

## APPENDIX

## A. Even quarters (10 varieties)

Standard—जगण (ISI) type (10 varieties)

- |          |   |          |
|----------|---|----------|
| 1. लभजग  | $\begin{array}{c} \text{ल भ ज ग} \\ \overbrace{ \text{s} } \overbrace{ \text{s} } \overbrace{ \text{s} } \overbrace{ \text{s} } \\ \text{कचाल्पविषयामतिः} \end{array}$        | रघु. I-2 |
| 2. गभजग  | $\begin{array}{c} \text{ग भ ज ग} \\ \overbrace{ \text{s} } \overbrace{ \text{s} } \overbrace{ \text{s} } \overbrace{ \text{s} } \\ \text{उद्वाहुरिव वामनः} \end{array}$       | „ I-3    |
| 3. लजजग  | $\begin{array}{c} \text{ल ज ज ग} \\ \overbrace{ \text{s} } \overbrace{ \text{s} } \overbrace{ \text{s} } \overbrace{ \text{s} } \\ \text{दधतुर्भुवनद्वयम्} \end{array}$       | „ I-26   |
| 4. गजजग  | $\begin{array}{c} \text{ग ज ज ग} \\ \overbrace{ \text{s} } \overbrace{ \text{s} } \overbrace{ \text{s} } \overbrace{ \text{s} } \\ \text{पार्वतीपरमेश्वरौ} \end{array}$       | „ I-1    |
| 5. लयजग  | $\begin{array}{c} \text{ल य ज ग} \\ \overbrace{ \text{s} } \overbrace{ \text{s} } \overbrace{ \text{s} } \overbrace{ \text{s} } \\ \text{उडुपेनास्मिन्सागरम्} \end{array}$    | „ I-2    |
| 6. गयजग  | $\begin{array}{c} \text{ग य ज ग} \\ \overbrace{ \text{s} } \overbrace{ \text{s} } \overbrace{ \text{s} } \overbrace{ \text{s} } \\ \text{माननीयो मनीषिणाम्} \end{array}$      | „ I-11   |
| 7. लतजग  | $\begin{array}{c} \text{ल त ज ग} \\ \overbrace{ \text{s} } \overbrace{ \text{s} } \overbrace{ \text{s} } \overbrace{ \text{s} } \\ \text{गमिष्याम्युपहास्यताम्} \end{array}$  | „ I-3    |
| 8. गतजग  | $\begin{array}{c} \text{ग त ज ग} \\ \overbrace{ \text{s} } \overbrace{ \text{s} } \overbrace{ \text{s} } \overbrace{ \text{s} } \\ \text{वागधेप्रतिपत्तये} \end{array}$       | „ I-1    |
| 9. लमजग  | $\begin{array}{c} \text{ल म ज ग} \\ \overbrace{ \text{s} } \overbrace{ \text{s} } \overbrace{ \text{s} } \overbrace{ \text{s} } \\ \text{प्रसूतः शुद्धिमत्तरः} \end{array}$   | „ I-12   |
| 10. गमजग | $\begin{array}{c} \text{ग म ज ग} \\ \overbrace{ \text{s} } \overbrace{ \text{s} } \overbrace{ \text{s} } \overbrace{ \text{s} } \\ \text{वंशेस्मिन्पूर्वसुरिभिः} \end{array}$ | „ I-4    |

**B. Odd quarters (32 varieties)**

**(i) Standard यगण (ISS) type (12 varieties)**

1.	जलयग	$\begin{array}{c} \text{ज ल य ग} \\ \overline{\text{I s}} \mid \overline{\text{I I s s s}} \\ \text{यथाविधिहुताग्नीनाम्} \end{array}$	खु. I-6
2.	जगयग	$\begin{array}{c} \text{ज ग य ग} \\ \overline{\text{I s s}} \mid \overline{\text{I s s s}} \\ \text{यथापराधदण्डानाम्} \end{array}$	„ I-6
3.	सलयग	$\begin{array}{c} \text{स ल य ग} \\ \overline{\text{I I s}} \mid \overline{\text{I s s s}} \\ \text{जगतः पितरौ वन्दे} \end{array}$	„ I-1
4.	सगयग	$\begin{array}{c} \text{स ग य ग} \\ \overline{\text{I I s s}} \mid \overline{\text{I s s s}} \\ \text{हिमनिमुक्तयोर्येगे} \end{array}$	„ I-46
5.	यलयग	$\begin{array}{c} \text{य ल य ग} \\ \overline{\text{I s s}} \mid \overline{\text{I s s s}} \\ \text{ऋसूर्यप्रभवोवंशः} \end{array}$	„ I-2
6.	यगयग	$\begin{array}{c} \text{य ग य ग} \\ \overline{\text{I s s s}} \mid \overline{\text{I s s s}} \\ \text{तितीर्षुर्दुस्तरं मोहात्} \end{array}$	„ I-2
7.	रलयग	$\begin{array}{c} \text{र ल य ग} \\ \overline{\text{s I s}} \mid \overline{\text{I s s s}} \\ \text{वार्धके मुनिवृत्तीनाम्} \end{array}$	„ I-8
8.	रगयग	$\begin{array}{c} \text{र ग य ग} \\ \overline{\text{s I s s}} \mid \overline{\text{I s s s}} \\ \text{प्रांशुलभ्ये फलेलोभात्} \end{array}$	„ I-3
9.	तलयग	$\begin{array}{c} \text{त ल य ग} \\ \overline{\text{s s}} \mid \overline{\text{I I s s s}} \\ \text{मन्दः कवियशः प्रार्थी} \end{array}$	„ I-3
10.	तशेयग	$\begin{array}{c} \text{त ग य ग} \\ \overline{\text{s s}} \mid \overline{\text{s I s s s}} \\ \text{व्यागायसम्भृतार्थानाम्} \end{array}$	„ I-7
11.	सलयग	$\begin{array}{c} \text{स ल य ग} \\ \overline{\text{s s s}} \mid \overline{\text{I s s s}} \\ \text{वागधीविषसंपृक्तौ} \end{array}$	„ I-1
12.	सगयग	$\begin{array}{c} \text{स ग य ग} \\ \overline{\text{s s s}} \mid \overline{\text{s I s s s}} \\ \text{तं सन्तः श्रोतुमर्हन्ति} \end{array}$	„ I-10

(ii) *Exceptional Types* (20 varieties)

## I. भगण (SSI) type (6 varieties)

1. यगभग	य ग भ ग s s   s s     s आपादपद्मप्रणताः	रघु. IV-37
2. रगभग	र ग भ ग s   s s s     s रामचन्द्रोदाशरथिः	,,
3. तगभग	त ग भ ग s s   s s     s सन्मङ्गललात इव	,, IV-47
4. जगभग	ज ग भ ग   s   s s     s तदन्वयेयुद्धिमति	,, I-12
5. सगभग	स ग भ ग     s s s     s दृष्टेन्योरावणवत्	शिष्ट. XIX-52
6. मगभग	म ग भ ग s s s s   s     s सौमित्रेयो भ्रातृरतः	

## II. रगण (SIS) type (6 varieties)

1. यगरग	य ग र ग   s s s s   s s s ममेवांशो जीवलोके	गीता. XV-7
2. रगरग	र ग र ग s   s s s   s s s धृष्टकेतुश्चेकितानः	,, I-5
3. तगरग	त ग र ग s s   s s   s s s अभ्यावहक्षेत्रमुप्त	कुमार. XVI-22
4. जगरग	ज ग र ग   s   s s   s s s इदं दुते भक्तिनम्रम्	,, VI-73
5. सगरग	स ग र ग     s s s   s s s व्यसनेस्मिन्मन्त्रशक्त्या	महावीरच. VI-2
6. मगरग	म ग र ग s s s s s   s s s संस्तूयन्ते विप्रकषात्	,, VII-22

III. नगण (III) type (6 varieties)

1. यगनग	$\begin{array}{c} \text{य ग न ग} \\ \overline{ \text{ s s s }   \text{ s } } \\ \text{अनाकृष्टस्यविषयेः} \end{array}$	रघु.	I-23
2. रगनग	$\begin{array}{c} \text{र ग न ग} \\ \overline{ \text{ s } \text{ s } \text{ s }   \text{ s } } \\ \text{भीमकान्तैर्नृपगुणैः} \end{array}$	,,	I-16
3. तगनग	$\begin{array}{c} \text{त ग न ग} \\ \overline{ \text{ s } \text{ s } \text{ s }   \text{ s } } \\ \text{अभ्युत्थितामिपिशुनैः} \end{array}$	,,	I-53
4. जगनग	$\begin{array}{c} \text{ज ग न ग} \\ \overline{ \text{ s } \text{ s } \text{ s }   \text{ s } } \\ \text{युगान्तवातचलिताः} \end{array}$	कुमार.	XVI-30
5. सगनग	$\begin{array}{c} \text{स ग न ग} \\ \overline{ \text{ s } \text{ s } \text{ s }   \text{ s } } \\ \text{दिवसंशारदमिव} \end{array}$	रघु.	X-9
6. भगनग	$\begin{array}{c} \text{भ ग न ग} \\ \overline{ \text{ s } \text{ s } \text{ s } \text{ s }   \text{ s } } \\ \text{सन्तानार्थयविधेये} \end{array}$	,,	I-34

IV. मगण (SSS) type (2 varieties)

1. ऋरमग	$\begin{array}{c} \text{ल र म ग} \\ \overline{ \text{ s } \text{ s } \text{ s } \text{ s } } \\ \text{फलानुमेयाः प्रारम्भाः} \end{array}$	रघु.	I-20
2. गरमग	$\begin{array}{c} \text{ग र म ग} \\ \overline{ \text{ s } \text{ s } \text{ s } \text{ s } } \\ \text{अप्यर्थकामौ तस्यास्ताम्} \end{array}$	,,	I-25

N.B.—The following points can be noted from a study of the *selection* of the illustrations above.

- (i) Kālidāsa does not use the exceptional varieties of the रगण (SIS) type and three exceptional varieties of the भगण (SII) type. It is only in the *Kumārasambhava* that we see the two exceptional varieties (तगरग and जगरग) of the रगण type used by him *once*. It may be noted that one of these two varieties, *i.e.*, तगरग variety, is found in the 16th canto, regarded as one of the spurious cantos of the work.



- (ii) The *Śiśupālavadha* of Māgha uses, in addition, only one exceptional variety, which is not seen in Kālidāsa and Bhāravi.
- (iii) The *Mahāvīracharita* (and not the *Uttararāmacharita* and *Mālātīmādhava*) gives, in addition, two exceptional varieties (सगरग and मगरग) not seen in Kālidāsa, Bhāravi and Māgha.
- (iv) The four exceptional varieties (रगभग, मगभग, यगरग and रगरग), though permissible, have not been used by Kālidāsa, Bhāravi, Māgha, Bhavabhūti and Śri Harṣa. Hence their illustrations have been selected haphazardly.

## A CRITICAL DISCUSSION OF THE STATUS OF SENSE-DATA

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### 1. *Introduction*

THE term 'sense-datum' was introduced into epistemological discussion by Mr. Bertrand Russell and Professor G. E. Moore; and it is largely through their writings that students of philosophy have become familiar with it. The word was coined for the purpose of indicating the distinction between the act of sensing and the content sensed, which were constantly being confused in literature bearing on the nature of sense-perception. The source of the confusion lay mainly in the circumstance that the same word "sensation" was being used to denote three totally different things: (a) the act of sensing, (b) the content sensed, and (c) the whole situation consisting of the act of sensing together with the content sensed. Consider, for instance, such a phrase as "the sensation of green". It is sufficiently notorious that by this phrase we sometimes mean the green which is sensed, as when we distinguish the "sensation of green" from the "sensation of blue"; and that we also sometimes mean by it the *sensing* of green, as when we distinguish "my sensation of green" from "your sensation of green". This confusion was, no doubt, natural enough, for the English language offered 'no means of referring to such objects as blue and green and sweet except by calling them sensations'.<sup>1</sup>

Another circumstance occasioning the confusion in question was the difficulty of grasping the nature of the act of sensing by means of introspection. As Professor Moore remarks, "the term 'blue' is easy enough to distinguish, but the other element, which I have called 'consciousness'—that which the sensation of blue has in common with the sensation of green—is extremely difficult to fix . . . it seems, if I may use a metaphor, to be transparent—we look through it and see nothing but the blue".<sup>2</sup> And it is significant that, apparently on this account, Mr. Bertrand Russell should himself have discarded the notion of any act of sensing at all in his later writings.

The difficulty of distinguishing between an act of sensing and the content sensed is more obvious in the case of what are called "organic

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<sup>1</sup> Cf. Prof. Moore's *Philosophical Studies*, p. 19.

<sup>2</sup> *Ibid.*, p. 20.

sensations". In the case of so-called visual sensations the distinction is not so difficult to make clear. For what is apprehended through sight has the characteristic of extensity; and it is not, therefore, so easy to regard visual sense-data as being at the same time mental acts. It is interesting in this connexion to recall that it was while considering the nature of the objects apprehended through sight that Berkeley arrived at the distinction between what I am calling the act of apprehending and the content apprehended. His central thesis, that the objects perceived, or, as he named them, "ideas", are one and all "in the mind" was easy enough to defend so long as he confined himself to unextended objects. Was not heat an intense pain? And could we conceive pain to exist apart from a sentient being? Heat must, then, be in the mind. But, when he came to deal with visual objects, it became apparent that these, being extended, could not be treated in the same way. Answering the objection that if extension and figure exist only in the mind, the mind must itself be extended and figured, Berkeley says:—"Those qualities are in the mind only as they are perceived by it;—that is, not by way of *mode* or *attribute*, but only by way of *idea*. And it no more follows the soul or mind is extended, because extension exists in it alone, than it does that it is red or blue, because those colours are on all hands, acknowledged to exist in it, and nowhere else."<sup>3</sup>

One consequence of the confusion referred to has been that people have been really talking about different things, while they believed themselves to be talking about the same thing; and a crude form of subjectivism has often resulted. Are not sensations mental in character? And are the 'things' we perceive anything else than 'clusters of sensations'? Such was the sort of argument which, consciously or unconsciously, led people to adopt the position, against which Professor Moore brought effective criticism to bear in his essay entitled "*The Refutation of Idealism*".<sup>4</sup> It was, then, mainly to avoid this pitfall that the term 'sense-datum' was introduced. It was not, indeed, intended straightway to imply that a sense-datum was

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<sup>3</sup> *Principles of Human Knowledge*, §49.

<sup>4</sup> Both Mr. Bertrand Russell and Professor Moore think that Berkeley's Idealism depended upon the confusion between the content sensed and the act of sensing (see, for instance, Professor Moore's *Refutation of Idealism*, p. 19, and Russell's *Problems of Philosophy*, p. 66). But as I have indicated, in §49 of the *Principles*, Berkeley drew a clear distinction between the act of apprehending and the content apprehended. This does not indeed prove that Berkeley may not have been misled unconsciously by the ambiguity of the words "idea" and "sensation". As I have pointed out elsewhere, there are passages which show that he was not free from this confusion. But I venture to suggest that when Berkeley talked of objects of perception as being "in the mind," he meant, on the whole, merely to give them the same status as images, or as Looke intended to give to the secondary qualities.

non-mental in character. Whether it was so or not was a further question. What the use of the term did serve to make apparent was the blunder of supposing that 'sense-data' must *necessarily* be 'in the mind' because acts of sensing are "in the mind".

Furthermore, the term was not meant to suggest (as its etymology does, perhaps, suggest) that the mind is merely passive in apprehending the entities thus named, that 'sense-data' are entities that exist independently of the act of perception, entities which are there, so to speak, simply waiting to enter into the relation of "acquaintance" with the apprehending mind. This, again, was left an open question although it may be noted in passing that Mr. Bertrand Russell did express himself in such a way as to lead one to suppose that in apprehending 'sense-data' no mental activity is involved.<sup>5</sup> Sense-data were said to be *given* only in the sense that they are not to be assumed from the outset to be created, so to speak, by the apprehending mind in and through the process of apprehending.

Professor Stout, it is true, objects to the use of the term on other grounds. "This is," he says, "a question-begging word. It suggests that what we originally know in sense-perception is merely the sense apparition as immediately experienced to the exclusion of anything beyond it. This assumption seems to be a mere superstition, which would make knowledge of the physical world impossible. I, therefore, prefer the term 'sensus', . . . because it does not prejudge the view that though knowledge is limited by immediate experience, it is not even originally limited to immediate experience."<sup>6</sup> This objection is connected with a particular view which Professor Stout takes of the nature of *sensa*, according to which, although 'immediately experienced' or 'lived through', *sensa* refer beyond themselves to physical things. I shall have to consider this view in what follows. Meanwhile, it is sufficient to say that, since the article containing the passage I have quoted was written in 1922, Dr. Broad has appropriated the term 'sensus' to denote an *existent* entity, which is numerically distinct from the physical thing to which it stands in a certain many-one relation. Were I, therefore, to use the term "sensus", it would probably suggest that I was prejudging the issue, which it is the purpose of this essay to discuss. Moreover, Professor Moore has sought to give a meaning to the term 'sense-datum' according to which by calling an entity a 'sense-datum' we are not committed to any particular view of the nature of that entity. "If

<sup>5</sup> Cf. "The Basis of Critical Realism," by Professor Hicks, *Aristotelian Society's Proceedings*, 1917, p. 331.

<sup>6</sup> *Mind*, Oct. 1922, p. 386.

we want to indicate what sort of entities he (*i.e.*, Mr. Russell) has meant by 'sense-data', in a way which will leave no doubt that there certainly are entities of the sort, I do not know", Professor Moore writes, "that there is any clearer way of doing so than . . . by saying that they are the sort of entities about which we make such judgments as 'This is a coin', 'That is a tree', etc., when we are referring to something which we are at the moment perceiving by sight or touch. Everybody can easily discover for himself the entity about which he is talking, when under such circumstances he judges 'That is a tree'. And in calling this entity a sense-datum, we by no means imply either that it is not identical with that part of the surface of the tree which he is seeing, nor yet that the opposite philosophical view, according to which, so far from being identical with this part of the surface of the tree, it is merely a sensation in his own mind, may not be the true one."

Professor Moore insists that what is *primarily* meant by a 'sense-datum' is something with which we are all perfectly familiar, and with regard to which no one would wish to maintain that there is no such thing. Any particular theory of its nature may be erroneous, it may be said to have certain characteristics which there are strong reasons for thinking it does not have, but of the fact of its own being there can be no manner of question. I am, however, doubtful whether the term can really be said to be of the non-committal character which is thus claimed for it. For one thing, it certainly does seem to imply that, whatever the nature of the entity so named may be, it is, at any rate, something 'given', whereas it may well turn out to be something that arises in and through the act of perception itself. Not only so. When Professor Moore asserts that the term 'sense-datum' is primarily used "simply as a name for entities the *existence* of which no one disputes", he is himself attributing to the entities in question a mode of being which there may be good reasons for holding does not, in truth, belong to them. And, in view of these considerations, it may seem rather a lame outcome to adopt the term on the strength of Professor Moore's recommendation. But the difficulty is to find a term that is entirely free from objection. I will only promise that in what follows I *am* using the word 'sense-datum' altogether in a non-committal sense and am not implying, at the start, any theory as to the nature of that which the word denotes. Its denotation may perhaps be indicated unambiguously by means of the following illustration.<sup>8</sup> If three persons, A, B and C, are visually appre-

<sup>7</sup> *Aristotelian Society's Proceedings*. Supplementary Vol. II, 1919, p. 182.

<sup>8</sup> I take this illustration from a paper by Professor Hicks in the *Proceedings of the Sixth International Congress of Philosophy*, 1927, p. 225.

hending an object such as is ordinarily described as a red rose, and if (say) A is an artist, B a botanist, and C is colour blind, we have good reason for asserting that the red colour of the rose, let us call it R, will seem different to each one of them—slightly different to A and B, while to C it may seem barely distinguishable from the hue of the leaves. It will seem, let us say, as  $r_1$  to A, as  $r_2$  to B, and as  $r_x$  to C. Now what I am denoting by the term 'sense-datum' is the  $r_1$ ,  $r_2$ ,  $r_x$ , in these several instances. I am not assuming any particular theory of its nature; to determine so far as possible its nature is the problem I have in front of me. I am not even assuming that R is a real entity—that, again, is one of the questions that a discussion of the problem just mentioned will force upon me. But, at the start, I am simply saying that in ordinary common-sense experience we do take R to be an actual property of a real object. And if this common-sense assumption should evince itself as philosophically justifiable, the task is evidently confronting us of trying to determine the character of the relation in which  $r$  stands to R.

One other preliminary remark is perhaps called for. I am concerned, of course, with the nature of sense-apprehension generally. But, inasmuch as visual perception is its most highly developed form, it is natural to consider the epistemological problems involved chiefly in the way they present themselves in the case of visual apprehension. Nevertheless, the main considerations that hold in regard to it will clearly hold likewise, *mutatis mutandis*, in regard to knowledge derived through means of the other senses. It is true that in the *New Theory of Vision* Berkeley assigned to what he called 'tangible objects' a status which it was his main purpose to prove cannot be assigned to 'visible objects'. In the *Principles* (§ 44) he tells us, however, that this was a provisional assumption merely, and makes it quite clear that in his view, the objects of all the senses stand, in this respect, upon precisely the same level.

## 2. *The Sense-Datum Considered as a Content Apprehended in Perception*

According to a naively realistic theory we have in and through perception a direct knowledge of physical things. We can directly perceive such things as tables and chairs. But the theory clearly does not imply that we 'literally see' each and every part of a chair or table at any one particular moment. For instance, it does not imply that as I am looking at the chair in front of me, I am literally seeing that portion of its surface which is hidden from my gaze or the inside of the wood of which it is made. All that is presumably implied is that given suitable conditions I should be able

to 'literally see' these parts, to which at the moment I have no direct cognitive relation.

I have been distinguishing between 'perceiving' a thing and 'literally seeing' it. But in ordinary language we, no doubt, use the word 'perceive' to indicate both these relations. I take the following sentences from Dr. Broad's *Perception Physics and Relativity*. "When we see a tree we think that it is really green and really waving about in precisely the same way as it appears to be. We do not think of the object of perception being 'like' the real tree, we think that what we *perceive* is the tree and that it is just the same at any given moment, whether it be perceived or not, except that what we *perceive* may be only a part of the real tree."<sup>9</sup> In this passage the word 'perceive' is clearly used in two different senses, (i) we are said to 'perceive' an 'object', which may at the most be a part of the real tree, and (ii) we are said to 'perceive' the tree. The distinction between (i) and (ii) may be indicated, partly at any rate, by saying that the relation denoted by the word 'perceive' in (ii) is a complex relation, one of whose components is the relation denoted by the word 'perceive' in (i), while the relation denoted by the word 'perceive' in (i) may prove to be an unanalysable relation. Let T stand for the tree, O for the 'object of perception' and M for the apprehending mind. Further, let R stand for the relation denoted by the word 'perceive' in sense (ii) and *r* for the relation denoted by the word 'perceive' in sense (i). Then the proposition M-R-T may be analysed according to common-sense, at any rate, into the propositions M-*r*-O and O-S-T, where *s* is the relation of part to whole. The proposition M-*r*-O, on the other hand, may, in fact, be unanalysable. Let us call the relation R the relation of 'referential perception' and *r* that of 'non-referential perception', assuming that O is a part of T.<sup>10</sup> Then it is clear that, according to common-sense, such things as tables and chairs are perceived only referentially. It is clear too that in an important sense R is not a direct relation between the perceiving mind and the physical thing. For, as we have seen, it is always further analysable. In one sense, therefore, perception of external objects must be indirect; and since this will be so on any theory of perception, we must mean something further by the terms 'direct' and

<sup>9</sup> *Perception Physics and Reality*, p. 1.

<sup>10</sup> These terms were suggested by Professor Moore in his *Tarner Lectures*. It is to be noted that according to Professor Moore's usage *r* will be the relation of 'non-referential' perception only if the theory of naive realism be assumed, that is to say if O in the above illustration is in fact a part of the surface of T. If it be not in fact a part of the surface of T, then the relation of non-referential perception subsists not between M and O but between M and that part of the surface of T which O *represents*, i.e., with which O is ordinarily identified.

'indirect', if we are to differentiate theories of perception according as they do or do not imply that we directly perceive physical objects. What further may be meant will become apparent as we proceed.<sup>11</sup>

All that a naively realistic theory seems, then, to involve is that what we 'directly' perceive at any particular moment is actually a part of the surface of the physical thing, which we referentially perceive; and this would mean, I take it, that there is no third term say X, such that when I am said to perceive an object O directly, this proposition is ever analysable into the propositions I-S-X and X-T-O where S and T are other relations. In other words, it would seem to be involved that what we have called the relation of non-referential perception is in fact unanalysable. Can this position be sustained?

Little reflection is needed to see that the contention of the naively realistic theory will not meet the actual facts. Take, for instance, the familiar example of a straight stick appearing bent when partially immersed in water, or that of the snow on the top of a mountain appearing red in the setting sun. The bentness in the stick or the red colour of the snow cannot be regarded as being features of the actual objects in precisely the same sense as straightness or whiteness are ordinarily supposed to be by unsophisticated common-sense. Or take the well-worn case of a penny. If the plane of the flat surface of a penny be at right angles to the line of vision the penny looks to us round. In other cases, it looks elliptical. But *ex-hypothesi* the penny is round and not elliptical. In such situations then, at any rate, it can hardly be said that we are 'directly' perceiving what is literally a part of the penny.

In the light of these considerations, five possible alternatives to a realistic theory of perception suggest themselves. (i) It may be maintained that, while it is true that what we apprehend directly is not in every case a part of the surface of the physical thing, it is so under some specially favourable conditions, and that in such cases we not only directly apprehend what is in fact a part of the physical thing, but that *we also know* that we are as a matter of fact directly apprehending a part of the physical thing. For the mere fact that we do directly apprehend in some cases actual parts of physical things will not enable us to determine in which particular cases this is so; and thus the question will arise why we should regard any one particular situation as more favourable than another. I do not know that anybody has tried to sustain this theory and, as it would seem plainly contrary to the facts, I shall leave it. Or (ii) it may be maintained that, while it is true

<sup>11</sup> See *infra*, pp. 24 and 33.



that what we perceive is a part of a thing, it is not a part in any ordinary sense of the term; that the relation of what we directly apprehend to the physical thing is rather that of a member of a class to the class of which it is a member. Such a view was held by Mill and is held by Mr. Bertrand Russell at the present time. Or (iii) it may be maintained that what we directly apprehend are actual qualities of things but that these qualities inhere in the physical thing not dyadically as common-sense supposes, but triadically. That is to say, they inhere-in-a-place-from-a-place. In other words what we take to be qualities are on this view relational properties. Such a theory has been called by Dr. Broad 'the multiple relational theory of inherence', and it has been put forward by Professor Whitehead. Or (iv) it may be maintained that what we directly apprehend are qualities of things, not necessarily as they are in themselves, but as they appear to us; that there is exhibited in perception a peculiar and perhaps unanalysable kind of relation, viz., the relation of 'appearing to have' between physical things and qualities. This theory has been called by Dr. Broad 'the multiple relational theory of appearing'. Or (v) it may be maintained that what we directly perceive is a certain existent related in a unique way to the physical thing which we referentially perceive, that this existent has all the qualities which it sensibly appears to have, and is never a part of the physical thing in any sense of that term. This would clearly be a theory of representative perception<sup>12</sup> and the sensum theory as sketched by Dr. Broad is a form of it.

It will be observed that the second and the third of these alternative theories meet the facts by modifying the ordinary conception of physical objects, while retaining the ordinary notion of direct perception. The physical things of Mr. Russell cannot be said to be literally in space and time at all as the physical things of common-sense are taken to be; and Professor Whitehead has to modify the ordinary notion of the way in which qualities inhere in physical things. The last two theories keep the common-sense notion of physical objects but it has to be recognised that what is directly apprehended may not be simply identical with an actual part or with actual qualities of physical things. It is obvious, however, that the fourth theory is that which stands nearest to the view of common-sense; and although even according to it, it can no longer be contended that what we directly apprehend must necessarily be simply identical with some part or quality of the physical thing, yet it would be wrongly described as a form of the representative theory of perception.

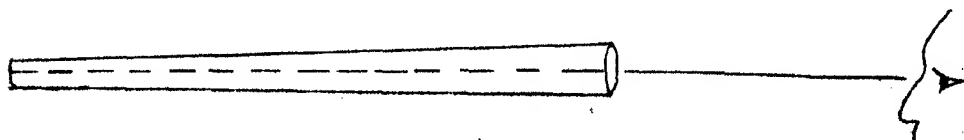
<sup>12</sup> I am using this term in the sense in which Professor Kemp Smith uses it in his book *Prolegomena to an Idealist Theory of Knowledge*, p. 16 sqq.

It would be wrongly so described, because when it is said that we apprehend things as they appear to us, it is not meant to introduce a third entity, which may be called an 'appearance', between the physical thing and the apprehending mind. On the contrary, the contention is that the act of apprehension is all the while being directed on the physical thing, not on its 'appearance'. It is true that in analysing the perceptual situation it is convenient to distinguish the 'appearance' presented by a thing from the thing itself. The sum of qualities possessed by the thing may be conveniently symbolised by  $a b c d e f \dots n$ , and the sum of qualities of the 'appearance' by  $a c f$ . But it is recognised that, in that case,  $a c f$  is merely an abstraction of our own, that it is not something which is there on its own account. That is to say, it is not something that 'represents' or 'stands for' the physical thing; it is so much of the physical thing as we are for the time being apprehending. And the circumstance that the physical thing may appear to have qualities which, as a matter of fact, it has not makes *in this respect* no difference. The illusory qualities do not 'stand for' or 'represent' the actual qualities; they are still ways in which the latter are being apprehended.

It might be, 'perhaps has not uncommonly been, supposed that no problem in respect to perception would arise except for the circumstance that what we have reasons, good or bad, for describing as the same physical thing appears differently to different percipients, and even to the same percipient at different times and under different conditions. It might, I mean, be supposed that if there were no variations in the way in which what we regard as one and the same physical thing appears, and if that thing always manifested itself uniformly to percipients, however they might be situated, there would be no epistemological problem to solve, or, at any rate, only one that would be easy of solution. But a supposition of this sort would, it seems to me, be possible only for one who failed to distinguish between too quite different things, between, namely, "directly apprehending what are *in fact* parts or qualities of physical things" and "directly apprehending parts or qualities of physical things and *knowing them to be such*". Let us suppose for a moment that we do, as a matter of fact, directly apprehend parts or qualities of physical things. Would that, in itself, adequately account for the fact that we perceive physical things? It is to be noted that any physical object comes before us never as a whole but only piecemeal; and that at any particular moment we can in any case observe only an infinitesimal portion of it. Let A be a physical thing and  $a_1, a_2, a_3$ , etc., the parts of A which we successively apprehend. Now, when we are apprehending say  $a_1$ , we either know that  $a_1$  is actually part of A or we do not. On the second alternative the question at once arises as to

how we can conceivably come to have knowledge of physical objects at all? *Ex hypothesi* all that we know when we perceive  $a_1$ , is that  $a_1$  has such and such sensible qualities; and the same holds true of  $a_2$ ,  $a_3$ , etc. How, then, can we come to know that  $a_1$ ,  $a_2$ ,  $a_3$ , etc., have to A the relation of part to whole? Indeed how can we even come to know that there is such a thing as A? If, on the other hand, the first alternative be taken, we have got to say that not only has  $a_1$  such and such sensible qualities, but also that we *know* that  $a_1$  has the relation R to A, where R is the relation of part to whole; and this position would appear to be not less open to objection, because it amounts to affirming that we can know a relation R between two terms  $a_1$  and A, one of which falls within our experience and the other, by the very nature of the case, falls without it.

I raise these questions because it seems to me that unless we are going to fall back on some such view as Berkeley's or Mr. Russell's, we are bound to assume that, in every perceptual situation, what we directly apprehend refers beyond itself to some physical thing, which can be known by description alone. The above way of stating the matter is, no doubt, excessively crude and requires modification in at least two respects. In the first place, we have already seen that what we directly apprehend is never necessarily identical with the actual qualities or parts of physical things; and, in the second place, although what we sensibly apprehend refers beyond itself to some physical thing, we can hardly suppose that we are aware of the detailed nature of this thing, merely in virtue of the fact that it is being referred to. What I mean is this:—Take a perceptual situation, in which, we—as would commonly be said—perceive a penny. Then, if our analysis so far has been on the right lines, we sensibly apprehend something, say X, and about this X we are knowing that it refers to the penny. (For the moment I am leaving it an open question whether this X is an existent entity or merely a quality or sum of qualities.) But if by this statement be meant not merely that X refers to some physical object which happens to be a penny but also that the physical object is *known* to be the flat, circular piece of metal called a penny which X refers to, then the statment is plainly false. That this is so can easily be shown. Suppose that there is a tapering rod of copper with a flat larger end of the same diameter as a penny, having the king's head and the other details impressed upon it as a penny has; and suppose further that someone is looking at this rod from the side of the larger end from a point on the straight line joining the centre of the flat larger end with the centre of the smaller end, as in the diagram.



If, now, the eye of the observer moves only along this straight line, it is certain that he will think that he is 'referentially' perceiving a penny, whereas there is here no such thing as the penny to be perceived. It is obvious, therefore, that all that we can truly say of X is that it refers beyond itself to *some* physical thing. It is, no doubt, true that when we sensibly apprehend such an object as X we judge it to refer not to some indeterminate physical thing but to a flat, circular piece of metal called a penny; and in most cases our judgment is justified. But such judgment is based upon associations formed through previous experience and involves, in fact, a kind of inference.

So soon, however, as the significance of this feature of 'objective, reference' is realised, it is easy to suppose that the 'presentative function' as Professor Stout calls it, of what we directly apprehend, has nothing whatever to do with its actual nature. Whether what we directly apprehend be an existent, mental or physical, or a sum of qualities or an essence, makes no difference to its presentative function. That is apparently why Professor Stout thinks that his theory according to which the sensum is a mental existent is not open to the objections which are frequently brought against any form of the representative theory of perception. "The doctrine of representative knowledge," he writes "is, in principle, indefensible because according to it we begin by apprehending a P, which represents O without apprehending O itself. But we cannot be aware of P as representative of O without being aware of O itself; and if we are initially aware only of P, there seems to be no conceivable way in which we could pass from the knowledge of P to the knowledge of O".<sup>13</sup> On his own theory, on the other hand, "the total object known is a complex unity which may be symbolized as  $P\bar{r}O$ , where P is the presentation, O an object distinct from it and  $\bar{r}$  is the relation between P and O".<sup>14</sup>

Leaving aside for the moment the question whether Professor Stout is right in this regard, it is plain in any case that awareness of physical things would be a 'direct' relation only in the sense that it would not necessarily involve inference. For the least that could possibly be known would be expressible in the proposition that what we sensibly apprehend refers to X a physical object, the detailed nature of which would, of course, remain to be determined by further investigation.

So far, then, we have simply confirmed the conclusion that according to both the significations mentioned, perception of an object would on any

<sup>13</sup> *Some Fundamental Points in the Theory of Knowledge*, p. 21.

<sup>14</sup> *Ibid.*, p. 21.

theory be direct or indirect in precisely the same sense. Is there, then, any other sense of the term 'direct' in which we may be said to have a direct perception of an object according to our theory and not according to others? In order to answer this question I will first of all recur to the two conceptions of the relation of acquaintance and the subject-object relation strictly so called.

Unfortunately both these phrases are used with very varying connotation in current discussions, and the best way of indicating how I mean to use them will be by taking an actual instance. It is now largely recognised by psychologists that the mental process through which we perceive a physical thing is of the nature of a discriminating and comparing activity. Let us suppose that such an act is directed upon a flat surface, which contains many tiny patches of different colours. It can scarcely be thought that at the very first glance we become aware of all the patches of colour which are actually there on the surface together with their mutual spatial relations. What can reasonably be asserted is that we are vaguely aware of the presence of these patches, some of which seem to stand out clearly against a more or less hazy background. In common parlance, this fact would, no doubt, be expressed by saying that the flat surface which contains these tiny patches of colour in a certain spatial order *appears* to the observer at the first glance to be hazy at some places and clear at others. Let us call such a relation as the observer has to the flat surface, the subject-object relation. The flat surface is the object upon which the mental act of discrimination is directed. The appearance, which this object presents at any one moment, may, following Professor Dawes Hicks, be called the content apprehended. Now, I am suggesting that the relation of acquaintance is no other than the relation which the conscious subject has to what I have just called the content apprehended. I shall return to this point later.

Two facts at once call for notice in such an analysis. In the first place, although the act is directed upon an object, the full, concrete content of this object can, by the very nature of the case, never be known until its features become sufficiently discriminated in and through the act of apprehension itself. If the object be, for example, a book, we cannot know that it is a *book*, and not something else, until sufficient discrimination has already taken place and we become aware of certain characteristics which are those of a book. This must be so since that the act of discriminating should be directed upon the object is a precondition of our knowing any fact whatever about it. One consequence that follows is that we never can tell on what particular object in the perceptual field the mental act is being

directed until the process of discriminating its features has proceeded to some extent. But it does not follow that the event which consists in the act being directed upon the object is temporarily prior to our knowing *any* fact about the object. What is implied is that knowledge of any of its features entails psychologically that the act of discriminating must be directed upon the object. Indeed, one would be inclined to say that it is impossible to find a situation in which a mental act is directed upon an object and yet the cognising subject knows no fact whatever about this object. This contention may seem inconsistent with the statement that we can never tell on what particular object our discriminating act is directed before discrimination has already to some extent taken place. But it is not really so. There is no reason why in a perceptual situation one may not know a fact about an object which is in truth a book, without knowing or recognising that the object is a book and not something else. The distinctions which we draw between particular objects like tables and chairs are themselves the result of discrimination. The most primitive forms of judgment are probably such impersonal judgments as 'it rains', 'it is cold', 'it freezes', and so on. In and through such judgments it would seem that the primitive mind would be ascribing certain characteristics to that portion of its environment, which immediately confronts it. In other words, for a very primitive mind the object would not be this or that particular thing but something much more vague, namely, the environment as a whole or in its entirety. And as we retrace the history of the mental life, we have to recognise that objects become for the cognising subject more and more vague and indefinite. But, however far back we go, we can hardly suppose that there would ever be a stage at which awareness of some fact about the object, however vague or indefinite it may be, entirely disappears. When, therefore, it is said that awareness of some fact is always involved in the subject-object relation what is meant is not that there is at least a vague awareness of this or that particular object but rather a vague awareness of the presence of numerous objects in a sense-field. Indeed, the contrary view would imply that the subject-object relation is merely of the nature of the 'compresence' which subsists between two physical objects. Such a view seems, indeed, to be that advanced by Professor Alexander, and it may be well to say a word or two about it.

By 'compresence' Professor Alexander means "not co-existence in the same moment of time but only the relation of belonging to one experienced whole". He contends that "our compresence with physical things in virtue of which we are conscious of them is a situation of the same sort

as the compresence of two physical things with one another."<sup>15</sup> This means, I take it, that we have got to distinguish two different relations: (i) the relation of 'compresence' between two objects and (ii) the relation of 'compresence' between entities when one at least is a conscious being. Let (i) be called R and (ii) S; and let *c* stand for the characteristic of being a conscious being. Then Professor Alexander's view may be stated in one of the two following ways:—

(a) He may mean that the proposition  $X-S-Y$ , where  $X$  is a conscious being and  $Y$  a physical object is completely analysable into the propositions  $X-R-Y$  and  $X$  has *c*, in which propositions the relation  $S$  does not of course occur at all. This, however, would seem to be far too naive a view of the nature of conscious experience. Are we to conceive of a conscious subject after the manner in which we conceive a physical thing, say an electron, the only difference being that the former has the additional property of being conscious? It would hardly be fair to attribute a view of this sort to Professor Alexander. Nevertheless, in some passages he would seem to come very near to asserting it. "The enjoyment of the mind's self," he writes, "is at the same time the contemplation of an object, distinct from it and non-mental. To know anything is to be along with it in space-time. Consciousness indeed is empirically unique, as being confined to a determinate order of empirical existents. But to be conscious of something else is not unique. *It is the one term of the relation which has the unique flavour and not the relation itself.*"<sup>16</sup>

(b) He may mean that the proposition  $X-S-Y$  is, indeed, not to be analysed in the manner just mentioned, but that whenever the relation  $R$  subsists between two terms, and at least one of them has the characteristics *c*, then provided that certain other conditions be fulfilled, *e.g.*, that the conscious individual is not sleeping, the relation  $S$  will necessarily subsist between them. That is to say, the proposition  $X-S-Y$  will be entailed jointly by the two propositions  $X-R-Y$  and  $X$  has *c*, under certain conditions. This interpretation is plausible and is probably that which comes nearest to expressing Professor Alexander's real view.

. In any case, however, it is not difficult to see that this relation of 'compresence' is different from the subject-object relation. In the first place, the subject-object relation is at least non-symmetrical if not asymmetrical. If, in a perceptual situation,  $S$  is the subject and  $O$  the object

<sup>15</sup> "The Basis of Realism," *Proceedings of the British Academy*, 1913-14, p. 204.

<sup>16</sup> *Space, Time and Deity*, Vol. II, p. 87. *Italics mine.*

of which S is aware, it is not necessary that O should likewise be aware of S. On the contrary, it is not, in general, true that O is aware of S. But I say that the subject-object relation is non-symmetrical and not asymmetrical because there is just a possibility that each of the two terms S and O might be aware of the other as its object. Such, for instance, would be the case if Mrs. N. Duddington is right in her contention that we can directly perceive other minds in the same sense that we can directly perceive physical things.<sup>17</sup> For, in that case, it would be possible that of the two terms  $M_1$  and  $M_2$  each will be aware of the other as its object when  $M_1$  and  $M_2$  are two minds. On the other hand, the relation of 'compresence' is symmetrical. If a term X is 'compresent' with another term Y, then it is also true that Y is 'compresent' with X. Furthermore, this relation is also transitive. If X is 'compresent' with Y and Y with Z, then it follows that X is 'compresent' with Z. This is obviously not true of the subject-object relation. In the second place, 'compresence' is a much vaguer term. In a perceptual situation, for instance, it would be permissible to say that the feeling-tone, which accompanies the act of apprehension, has the relation of 'compresence' to that which is being apprehended and the converse will also be true. But it would be nonsense to say that the subject-object relation subsists between the feeling-tone and the physical thing.

Coming back now to the position from which we started,<sup>18</sup> the second fact that calls for notice is this. What I have called the content apprehended does not, I urge, stand between the apprehending subject and the object as a *tertium quid*. There would be no content apprehended at all save for the fact that the act of discriminating is directed upon the real object. As the discrimination proceeds one after another of the characteristics of the object come to be differentiated; and the process of discrimination proceeds more or less rapidly according as the object is one of a class that is more or less familiar; so that at no two moments will the content apprehended be precisely the same. Furthermore, in virtue of the circumstance that the content apprehended is, in a sense, a selection of the qualities of the object, there is bound to arise a contrast between the totality of the characteristics of the object, and the totality of those that make up the content apprehended. The most obvious instance of this is when an object is at the outset vaguely apprehended, particularly when it is unfamiliar. There is not, or at least need not be, indistinctness or vagueness attaching to the qualities

<sup>17</sup> Cf. *Proceedings of the Aristotelian Society*, 1918-19, p. 147 sqq.

<sup>18</sup> *Supra*, p. 78.



of the unfamiliar object themselves. But there is nothing in the least to justify the idea that these appearances stand between the object and the apprehending mind. For all the while the act of discriminating is being directed upon the object, in all its fulness of detail, and it is partly in consequence of the process of apprehension being gradual that the contrast in question arises.

The subject-object relation may, then, on this view, be said to be a 'direct' relation in a sense different from the two senses previously referred to. It is not 'direct' in the sense that there cannot arise a contrast between the qualities which an object may appear to have and those which it has. But it is direct in the sense that there is no third term standing as a *tertium quid* between it and the percipient. And it is a theory of perception as being direct in this sense that I shall try to shew grounds for holding to be tenable.

The issue really turns upon the kind of being that is to be assigned to the content apprehended. In urging that the content apprehended is not a *tertium quid* between the object and the perceiving mind I am virtually maintaining that it is not an existent, and that it differs essentially in that respect from both terms of the subject-object relation, as that relation is involved in perception. What exactly is, then, one asserting in laying down the negative proposition that the content apprehended is not an existent? I may make appeal here to the very clear distinction that Dr. Broad has drawn between that which is both real and existent on the one hand and that which is real but not existent on the other, which latter he calls an abstractum.<sup>19</sup> While allowing that no definition can be furnished of the term 'existence', what it denotes can, he thinks, be unambiguously described. In the first place, whatever exists can be referred to in a proposition *only* as a logical subject. But this property cannot by itself be taken to mark out existents, because there are, or may be, some abstracts of which the same can be said. In the second place, however, there is a property which belongs to all existents and which belongs to no abstracts—the property, namely, that they are either literally and directly in time or have those characteristics which make them appear to human minds to be literally and directly in time. Abstracta, on the other hand, although some of them are closely connected with existents, and thereby become indirectly connected with time neither are nor appear to be literally and directly in time. They have, in short, the kind of being which it has now become customary to call that of subsistence. And these subsistents or abstracta can be enumeratively indicated. Under this head are to be included qualities,

<sup>19</sup> *The Mind and its Place in Nature*, p. 18 sqq.

relations, numbers, and also propositions and classes, if there be such entities.

Now, in asserting negatively that the content apprehended in perception is not an existent, I am implying positively that it belongs to the class of realities, the subdivisions of which have just been enumerated. I am saying that the content apprehended when regarded in and for itself, is just a complex of qualities and relations, and that it is, therefore, a subsistent (or abstractum) in the sense indicated, that it is real but not existent. It is not, like the object, something which is already there upon which the act of perception can be directed; it is something which only subsists if and when the act of perception is directed upon the object. Even so to describe it is in one respect misleading. What appears is not something which in virtue of its own happening forces itself upon recognition; it appears only in virtue of the act of perceiving being directed upon an object. The act of perceiving is quite definitely an event in time. Does it, in any way, follow that the perceived content is likewise an event in time?

Consider an analogous case. Suppose we are thinking of the various properties of a triangle. At one time we may be thinking of the fact that its three angles are together equal to two right angles and at another time (say) of the fact that the side opposite to the greater angle is greater than the side opposite to the smaller one. Now, in such a case, what is certainly in time is the event which consists in the mental process of thinking now of the one property and now of the other. Yet it is clear that the properties of the triangle are not themselves events in time, although they are contents apprehended. Why, then, should not the same hold true of the contents apprehended in a perceptual situation? The only relevant difference between a thought situation of this sort and a perceptual situation is that in the one case the object thought about is a mathematical entity while in the other case it is an existent physical thing. But the properties or qualities of an existent thing are not themselves existents. They are, it seems to me, universals in precisely the same sense in which the properties of a triangle are; and if the content apprehended is a selection from the total qualities of the object, it would seem reasonable to conclude that it too is a timeless entity.

It will, however, be objected that I am overlooking one important circumstance. The content apprehended in the case of a triangle is, it will be said, something altogether independent of the act of thinking about it. The property of the triangle, that its angles are together equal to two right angles, is in no sense dependent upon the act of thinking it. The content

apprehended in a perceptual situation is, on the other hand, dependent on the act of apprehension, and so the analogy breaks down. This objection seems to me, however, to be based on confusion. No doubt, the property of the triangle that its angles are together equal to two right angles is independent of any act of thinking. Yet it is so because it is a truth, a part of the total system of interrelated truths that make up the science of geometry, and which do not, in any way, depend for their truth on being known by a conscious subject. But, when at any particular moment we make a selection from this total system of relationships for special consideration and form a judgment about it, the content which is then apprehended in and through this act of judgment is not independent of the act.<sup>20</sup> What I mean will perhaps be best illustrated by taking a case where the judgment is false. Suppose someone judges that  $2 + 2 = 5$ ; and believes that this is a true proposition. Then the content apprehended by him will be that  $2 + 2 = 5$ , and this content will be dependent upon his act of thinking in precisely the same sense as the content apprehended in a perceptual situation is dependent upon the act of apprehension. In the same way, if one judges that  $2 + 2 = 4$ , or that the angles of a triangle are together equal to two right angles, the *contents as thus* apprehended in and through the act of thought are as much dependent upon that act as in the case of the false judgment. The truth is that such statements as  $2 + 2 = 4$ , or that the three angles of a triangle are together equal to two right angles, are ambiguous. Sometimes they stand for facts or truths and sometimes for judgments. In the former case, they are independent of the acts of thinking, but in the latter case they are not. Only in the latter sense are they properly spoken of as contents apprehended. We may conclude, then, that the case in which we become gradually aware of the various properties of a triangle is in all relevant respects analogous to the case in which the qualities of a physical object are successively apprehended in a perceptual situation.

This conclusion is strengthened by the consideration that the sense in which the content apprehended is said to be dependent upon the mental act and the object is entirely distinct from the sense in which one existent thing can be said to be dependent upon another. As I have urged the content apprehended is dependent for its very being upon the mental act and the object. If either of these should cease to exist, there would be no content apprehended. Now, if the content apprehended were an existent entity it could have the property mentioned if and only if one or other of the

<sup>20</sup> I am here, I take it, merely emphasising what Mr. Johnson in his *Logic* (Vol. I, p. 2. sqq.) has distinguished as the 'epistemic' aspect of what is judged and the 'constitutive' aspect.

following conditions were fulfilled. Let us denote the content apprehended by C, the mental act by M and the object by O. Then (i) C may be casually dependent upon M and O in such a manner that whenever M and O co-exist C comes to exist and whenever either M or O ceases to exist C ceases likewise to exist. In other words, O and M would both be necessary and jointly sufficient conditions of the existence of C. Such for instance, would be the relation between the event which consists in putting on the switch and the event which consists in the illuminating rays of an electric lamp. When the switch is put on there is light, when it is turned off the light, as we say, goes out. It is quite certain, however, that the relation between M, O and C is not a relation of this sort. For *ex hypothesi*, M and O do not cause C. Or, (ii) M and O may both be parts and the only parts of C, in which case both will be necessarily and jointly sufficient for the occurrence. This alternative too must obviously be ruled out. Or (iii) C may be a part both of M and O. This will be the case (a) if O and M overlap and C is the part which is common to them or (b) if C is itself divided into mutually exhaustive parts, one of which is identical with a part of O and the other with a part of M. In the latter case C will be an existent with one leg in the physical realm and the other in the mental realm, so to speak. C could not be exclusively a part of M alone or of O alone. Because in that case C would not be dependent on both M and O but only on one of them, upon that entity, namely, of which it happens to be a part. There is only one possible way in which C could be a part exclusively of either M or O and yet be dependent in the way required on both of them. This would be when C is a part of one of them and is causally dependent upon the other. But we have already disallowed the application of the category of causality in this connexion. It is again easy to see that the last alternative is unsatisfactory. For it is hardly intelligible to talk of the mental act and the object as overlapping one another. The characteristics of a mental act and the characteristics of a physical object are so heterogeneous that it seems nonsense to speak of these two as having a common part. Nor is the alternative (b) any less open to objection. The content apprehended is certainly not made up of two heterogeneous parts, one of which partakes of the nature of the act and the other of the nature of the physical object. Indeed, such a position hardly needs refutation.

I conclude, then, that *in none of the senses just indicated* is the content apprehended dependent upon the mental act or the object. It may be said to have an unchangeable mode of being, for the simple reason that it is not something that can be operated upon, or acted upon, or affected in any way. And in like manner, it does not act upon anything else. It does not

obey the law of gravitation or that of chemical affinity. It does not exert force nor is it a mode of energy. It does not perceive or think or will. In short, it does not form part of what we ordinarily describe as the interconnected system of concrete existing facts. And there can, I imagine, hardly be any doubt that in ordinary usage, at any rate, we should not speak of that as existing of which all the characteristics just specified have to be denied. We seem, therefore, entitled to assert that the content in question is of the nature of a subsistent and not of an existent.

There may be one other objection raised to what I have been urging which I will try to remove. We have seen that the content apprehended can never be said to be absolutely identical with the content of the object. To refer to our former illustration, the patches of colour that are there on the flat surface of a penny are not themselves hazy or indistinct though they may appear to be so on a casual glance. And this circumstance we usually express by saying that the object looks to us different from what in fact it is. Let  $a_1, a_2, a_3$ , etc., be the qualities, which an object O appears, as we commonly say, to have, and  $q_1, q_2, q_3$ , etc., the qualities which O in fact has. Now, it has been maintained that the proposition that O appears to have  $a_1, a_2, a_3$ , etc., is further analysable, and that it can be analysed into the following propositions:—There is a particular or an existent entity X, which in fact *has* the qualities  $a_1, a_2, a_3$ , etc., and there is a unique relation R between X and O, which holds only between X and O and no other object, and which is such that when it subsists between X and O, X is ordinarily said to be the appearance of O. One characteristic of this relation R is that it is a many-one relation. The reason why this analysis is insisted on is that it is assumed that the only relation which can subsist between a quality and a substance is that of inherence, namely, that which is ordinarily expressed by saying that a substance *has* a certain quality. If the patches of colour on the flat surface of the penny are not themselves hazy but appear to be so, in order that such a judgment should be possible, it is contended, there must *be* something which has the characteristic of haziness. For if nothing has this characteristic, how can it be said that the patches on the flat surface look hazy? Why, for instance, do we not judge that they look red or green rather than hazy? That this consideration is one which actually weighs comes out clearly in what is said by Dr. Broad. He is taking the instance of a penny looking elliptical from the side and he argues thus:—"If, in fact, nothing elliptical is before my mind, it is very hard to understand why the penny should seem *elliptical* rather than of any other shape."<sup>11</sup> And his meaning apparently is that there must *be*

<sup>11</sup> *Scientific Thought*, p. 240.

something which in fact *has* the characteristic of ellipticity, if anyone judges that the penny looks elliptical I am not suggesting, of course, that Dr. Broad is unaware of an alternative explanation. For immediately after writing thus he goes on to say, "I do not now regard this argument as absolutely conclusive, because I am inclined to think that the multiple relation theory can explain these facts also."<sup>22</sup> But nevertheless he thinks that "it is at least a good enough argument to make the sensum theory well worth further consideration."<sup>23</sup> In other words, he holds that such an argument has force; and I take it, he is influenced by the common assumption that the only relation which can subsist between a quality and a substance is that of inherence.

If this assumption be sound, it would seem to undermine the conclusion which we have reached in regard to the nature of the content apprehended. For it involves that in so far as the content apprehended comprises qualities which are not found in the object of apprehension, it must be a substance different from the object, since, in the first place, these qualities must inhere in something, and since, in the second place, they cannot inhere in the object seeing that we should then have to make the impossible supposition that two incompatible sets of qualities inhere in the same substance at the same time. But so far from thinking this to be a weighty argument against the view I am taking, I am inclined to think that it is a *reductio ad absurdum* of the assumption that the only relationship which can subsist between a quality and a substance is that of inherence. The whole trouble arises, I think, because we persist in assuming that the proposition "C appears to have  $a_1$ ,  $a_2$ ,  $a_3$ , etc.," is further analysable in the way suggested. But the artificiality of the proposed analysis would be apparent if one recognised that it implies, for example, the assumption of existents which are literally characterized by vagueness and confusedness. I am arguing then for the recognition of another relationship that may subsist between a quality and a substance, that namely, which is expressed in ordinary language by saying that a substance or a thing *appears to have* such and such a quality. Of course it is not to be supposed that this relationship ever subsists between a substance and a quality except in a cognitive situation where the mental act is directed upon an existent object. As Lotze was fond of insisting it is meaningless to speak of 'appearing' at all save on the pre-supposition that there is *both* something that appears *and* a mind to which it appears.

<sup>22</sup> *Scientific Thought*, p. 240.

<sup>23</sup> *Ibid.*, p. 240.

The view, which I am criticising owes its prevalence I think partly to a verbal confusion and partly to a habit of mind engendered by too great a reliance upon logical symbolism. Consider the question "If nothing has the characteristic of haziness how do you judge that something appears hazy?" The truth that is here suggested is, of course, that unless you are acquainted with haziness in a particular instance you cannot judge that something looks hazy. But this does not necessarily imply that there must *be* something which has the characteristic of haziness if we judge that something looks hazy. In formal logic it is, no doubt, natural to take the assertion that S is P as an ultimate form of predication, and to look upon the assertion that S appears to have the property of P with suspicion. The latter assertion has all the look of being complex; and seems to necessitate the attempt to analyse it in order to reduce it to forms of propositions that are recognised as ultimate. And this requirement would, of course, be met by resolving it into the propositions already indicated.

### 3. *The Sense-Datum Considered as an Existent Entity*

I am inclined to think that the prejudice just mentioned in favour of logical formalism, as I will call it, is largely responsible for the sensum theory as it is developed by Dr. Broad. That theory may be stated roughly as follows:—Sensa are existents, and existents of a very peculiar kind. They are what are immediately or directly conscious of, but their peculiarity is that they refer beyond themselves to physical things. We perceive physical things *with* them. Their joint causes are the physical things to which they refer and the bodily conditions of the percipient subject. They may also be partly dependent qualitatively on the mental states of the percipient subject. Furthermore, they have all the qualities which they appear to have (and by this is meant all those qualities which we apprehend them as *having*) though they may well have more qualities than those which we apprehend them as having.

It is this last feature to which I would first draw attention. It is clear that the mere fact that sensa are products of physical things and the bodily organism, and, it may be, the mind of the percipient, is not in itself sufficient to ensure that they will appear to be precisely what they are. For it may well be the case that although sensa be produced in the manner indicated yet when they are being apprehended by a discriminating and comparing act they will appear different from what they actually are. And it may rightly be questioned whether, if the contrast between appearance and reality breaks out in the case of sensa in and through the act of apprehension, any thing is gained by substituting sensa for physical things as the objects upon

which the apprehending mind is directed. For it was ostensibly in order to explain the incompatibility of nature between what is immediately apprehended and what is supposed to be there independently of being apprehended that the sensum theory has been framed. This argument may be met in one of two ways: (i) It may be contended that the contrast which can occur between the content apprehended and the qualities of the object (in this case the sense-datum) upon which the act of apprehension is directed is never so great as the contrast that admittedly subsists between what is immediately apprehended and the actual characteristics of the physical object and that to explain the latter contrast some causal factor not needed to explain the former will have to be introduced. (ii) It may be contended that we have independent grounds for believing that the entity which we directly apprehend is a causal product of the thing, the body and the mind of the percipient. I shall recur to both these contentions.

Meanwhile, it may be well to look at the grounds on which it is alleged that *sensa cannot* appear to have properties which, as a matter of fact, they do not have. The real difficulty in interpreting the facts of sense-perception is due, so Dr. Broad thinks, to the circumstance that frequently we seem to be aware of some properties in an object, which properties are not really present and are perhaps incompatible with properties that are present.<sup>24</sup> But why does he regard this as a difficulty? The answer, I think, is that he persists in analysing such a proposition as 'X appears to have the property *p*', into the three propositions: 'X has the property *q*'; 'Y has the property *p*'; and 'Y has the relation *R* to X'. In other words, he is tacitly assuming from the start what is the precise point in dispute that there cannot be such a relation as that which is indicated by the phrase 'appearing to have' between an existent entity and a property. Using a well-worn illustration, he writes:—"We seem to recognise elliptical shape in the penny, when the penny really has the incompatible quality of roundness. The solution which the sensum theory offers is to change the subject. *Something*, it admits, is elliptical and something is round. But they are not the same something. What is round is the penny, what is elliptical is the sensum. Now clearly this would be no solution if the same sort of difficulty were to break out in the *sensa* themselves. In that case we should need to postulate appearances of appearances, and so on indefinitely."<sup>25</sup>

The assumption I have indicated lies, it seems to me, at the basis of the sensum theory as it is developed by Dr. Broad. Indeed, the whole theory

<sup>24</sup> *Scientific Thought*, p. 244.

<sup>25</sup> *Ibid.*, pp. 244-45.



so far as I can see, virtually amounts to a working out of the consequences of this assumption. To say this is not, of course, to refute the theory. For while it may not be true that the only relation between a quality and an existent entity is that of inherence, it may be the case that a theory which proceeds on this assumption is better able to explain the facts of sense-perception than any other.

If Dr. Broad's theory is to be workable, he ought to be able to offer some account of the nature of the psychical processes in and through which *sensa* comes to be apprehended by the conscious subject and of the way in which *sensa* come to be involved in our perception of external things. In other words, it is requisite for him to give reasons for taking the nature of the mental act in and through which *sensa* are apprehended to be such that no contrast between appearance and reality can break out so far as *sensa* are concerned; and from a consideration of the actual status of *sensa* to show how they come to be related in sense-perception to physical objects. One of two lines of reflexion may here be followed. (a) It may be argued that since *sensa* are produced by the action of the physical things upon the bodily organism or the mind of the percipient under certain conditions, they are transitory events. (b) It may be argued that a world of *sensa* exists side by side with the world of physical objects and that in a perceptual situation we select certain of these *sensa*, with which to perceive physical objects. I shall deal mainly with the first contention.

The natural adjunct of Dr. Broad's theory one would have expected to be the doctrine that *sensa* are known by 'acquaintance' in Mr. Russell's sense of the term, or in Professor Stout's phrase by 'simple apprehension'. Only then, it seems to me, can any case be made out for the contention that *sensa* cannot appear to be different from what they really are. But Dr. Broad apparently wishes to maintain that *sensa* are known by a discriminating and comparing act which is directed upon them. For he tells us that "a *sensum* is not something that exists in isolation; it is a differentiated part of a bigger and more enduring whole, *viz.*, of a sense-field, which is itself a mere cross-section of a sense-history."<sup>26</sup> I would urge, then, that this account of the nature of the act of apprehension is irreconcilable with his fundamental position just mentioned.

Dr. Broad distinguishes sharply between "failing to notice what is present in an object" and "noticing what is not present is an object"<sup>27</sup>;

<sup>26</sup> *The Mind and Its Place in Nature*, p. 195.

<sup>27</sup> *Scientific Thought*, p. 24.

and he insists that "sensa cannot appear to have properties, which they do not really have, though there is no reason why they should not have more properties than we do or can notice in them".<sup>28</sup> The reason he gives is as follows:—If a thing, as we commonly say, "appears to have" a quality which is inconsistent with one it actually has, then on the assumption that the only relation that can subsist between a quality and an existent entity is that of inherence, we have got to suppose that the quality in question inheres in a different existent. For obviously these inconsistent qualities cannot belong to the same existent at the same time. A like consideration will hold if the qualities which a thing 'appears to have' are more than those which it actually has, though these may not be inconsistent with those which it has. But this will not hold if the qualities which we apprehend a thing as having be less than those which it actually has. For there is no sort of inconsistency in supposing that the qualities which we apprehend a thing as having and those which we do not apprehend it as having may belong to one and the same thing. For instance, suppose that a thing S has the qualities  $q_1, q_2, q_3$ , etc., of which only  $q_1$  and  $q_2$  are apprehended. There is no reason for supposing that  $q_1$  and  $q_2$  must belong to existing entities different from S simply because they alone are apprehended. On the contrary, there is no contradiction in supposing that  $q_1, q_2$  and  $q_3$  all belong to one and the same thing. This, however, will hold only on the assumption that when  $q_1$  and  $q_2$  are thus singled out of the totality of qualities to which they belong they will be apprehended as being identically the same as they are in their original setting. Can this assumption be sustained?

The distinction here drawn between "failing to notice" what is present in an object and "noticing what is not present in an object" is at least in one respect an unhappy one, inasmuch as it tends to suggest that the process of apprehension is atomic in character, that the features of the objects in the sense field are apprehended one by one, very much after the fashion in which on a dark night various objects in a landscape may be illuminated successively by a beam of light. And the phraseology which is used is not a matter of mere accident, but betrays, I venture to think, a fundamental misinterpretation of the nature of discrimination. If the process of apprehension were like that (say) of counting, then, no doubt, nothing could be apprehended as having a quality different from what it has. For when the act of apprehension is directed upon an object, we should either apprehend its features or we should not and there would be an end of it. The problem, however, is not so simple; and there is ample evidence to show that when

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<sup>28</sup> *Scientific Thought*, p. 244.

we fail to notice features that are present in an object, that object may seem to us to have qualities inconsistent with those it actually has.

In the first place, since the process of discrimination is, in a sense, a process of singling out certain features amongst those which an object possesses, it does as a matter of fact often happen that the complex of qualities which are thus held apart seem different from what on other grounds we know they are in their original setting. In the second place, some new elements may be added to what is apprehended in and through the apprehending act and then again certain of the features singled out of the totality belonging to the object may seem different from the actual qualities of the object. I will take the two cases in turn.

(i) An obvious example of the first is the fact that objects in the field of inattention appear blurred and obscure, while those in the field of attention appear clear and distinct. There is, however, no reason to suppose that the former objects are themselves indistinct or obscure, though they appear to be so. Or take Stumpf's case. If A, B and C be three patches of colour having *a*, *b* and *c*, three slightly different shades of blue such that *b* is the shade intermediate between *a* and *c*, it is found that when A and B or B and C are adjacent and presented together to an observer, he will not distinguish between shades *a* and *b* or *b* and *c* provided the difference between *a* and *b* or *b* and *c* be sufficiently small. When, however, A and C are presented together he can and does distinguish between shades *a* and *c*. The point is not simply that the observer fails to notice the difference between A and B, and B and C, but that these seem to him to be of the same shade.

(ii) It is a well-known psychological fact that interpretation plays an important role in sense-perception, that 'pure sensation is,' as James Ward expressed it, 'a myth'. For one thing, a number of revived factors are involved and become grouped, so to speak, round the actually discriminated features of the object upon which the act of apprehension is directed; and this circumstance may bring about that the object appears different from what it is. Take, for instance, the portrait of a familiar face. What, in this case, the act of apprehension is really directed on are patches of varying shades of colour which are arranged in a peculiar way on a flat surface. Yet when one looks at this surface, it does not usually appear flat. If it did, it would hardly be taken as representing the friend's face. Similarly, in the example Professor Stout quotes from Hutchison Stirling, when Friday first saw a ship, it certainly did not appear to him precisely as it appeared to Crusoe. The acts of apprehension of each of them were

directed on the same object; but the difference between their respective experiences did not presumably consist *merely* in the fact that in Crusoe's case the object was associated with various trains of ideas and emotional complexes, while in Friday's case such associations were lacking. It consisted *also* in the circumstance that the one beheld the various parts of the ship in their proper proportions while the other did not. Or take the case of illusions, such as when a rope is mistaken for a snake. The act of apprehension is, of course, according to the view I am taking, all the while directed on the rope. But what presumably happens when the rope is supposed to be a snake is that a different set of revived factors come into play than in the case of veridical perception. Instances innumerable might be cited, but it is sufficient here to point out that in such cases the revived factors do not merely influence the apprehension of the object but actually bring about that it looks different from what in fact it is.

But, it will be objected that in the above examples it has been taken for granted that it is the surfaces of physical things upon which the act of apprehension is directed and that it has been argued that the qualities of the surface look different from what they are, while, *ex hypothesi*, sense-data are not to be identified with the surface of physical things. This objection seems to me, however, to be irrelevant. For if the nature of the act through which *sensa* are apprehended is assumed to be in essence similar to that through which, according to the opposed view, physical things are apprehended; and if in the one case the object may look different from what it is because of the peculiar nature of the act of apprehension why should not the same hold good in the other case also? Furthermore, Dr. Broad himself allows that Stumpf's case is perfectly valid and that from it it does follow that *sensa* may, at any rate, be more differentiated than they seem. But, strictly speaking, Stumpf only proves that the surfaces of physical things may seem to have an identical colour although there are slight differences between the shades which they actually have. This is clear from the following consideration: When three patches of colour A, B and C having the shades *a*, *b* and *c* respectively are taken, and it is asserted that there must be a difference of shade between *a* and *b*, as also between *b* and *c*, though we cannot observe it, the argument obviously presupposes that *a*, *b* and *c* remain identical during the whole operation; and this presupposes that A, B and C have undergone no change during the interval. For the argument is of this form; *b* cannot be identical in character with either *a* or *c*. For if it were identical in character with *a*, then it would be distinguishable from *c*, since *a* and *c* are distinguishable. But *b* and *c* are found to be indistinguishable. Therefore, *b* is different in character from *a*.

And, for a similar reason *b* is also different in character from *c*. The argument obviously depends on the possibility of *a*, *b* and *c* being each presented at least twice. If, however, A, B and C be sense-data this requirement could hardly be fulfilled, since sense-data are alleged to be events which cannot occur twice.

The argument from Stumpf's case and from other cases where an object seems to have qualities inconsistent with the qualities which it actually has may be met in either of two ways: (*a*) It may be maintained that the act of apprehension is not, in fact, directed on the object, but is really directed on another existent which has all the qualities which the thing seems to have and which is brought into being by the thing on the one hand and the body and mind of the percipient on the other. Or (*b*) it may be maintained that the phrase "appearing different" is ambiguous, and that in some cases at any rate it does not mean "appearing to have inconsistent qualities".

It is the latter alternative that Dr. Broad adopts in trying to solve the difficulty raised by Stumpf's case. The phrase 'appearing to have' is doubtless ambiguous. Suppose for instance, I judge that this sheet of paper which I am seeing now is whiter than the one I saw yesterday, and that my judgment is mistaken. Such a judgment will ordinarily be expressed by saying that the present sheet of paper *appears to me* to be whiter than the one I saw yesterday. Now, this sense of the phrase 'appearing' is, according to Dr. Broad, different from the sense in which a round penny is said to 'appear' to be elliptical. For, in the latter case, there is actually something elliptical present to the percipient, while in the former case there need be nothing before my mind which is actually whiter than the sheet of paper which I saw yesterday. In general, then, it would seem possible to make a mistaken judgment in regard to the relational properties of a thing, although there is nothing before our mind which actually *has* those relational properties. It is, so it is contended, in this latter sense that two shades of colour may 'appear to be the same' though there is a slight difference between them. When we judge of two patches A and B having different shades of colour that they 'appear to have the same shade of colour', the true account of the matter is not that there is some one determinate shade of colour which both A and B 'seem to have' but that we have made a mistaken judgment about the relational properties of A and B.<sup>29</sup>

The distinction which Dr. Broad is here insisting on is, I take it, identical with that which he once drew between "not seeming to have the characteristic *c*" and "seeming not to have the characteristic *c*". He then wrote as

<sup>29</sup> Cf. *Scientific Thought*, pp. 244, 245.

follows:—"I think we say that, 'this thing seems *not* to have the characteristic *c*', when and only when it seems to have some other determinate characteristic *c* under the same determinable *C* as that under which *c* falls. Thus, we should say of the half-immersed stick, not merely that it did not seem to be straight, but also that it seems not to be straight; meaning that it seems to have a certain determinate shape other than (and therefore inconsistent with) the determinate shape called 'straight'. When we should merely say that 'this thing does not seem to have the characteristic *c*', I think we mean that it is not at present presenting *any* determinate value of that determinable *C* under which the determinate *c* falls."<sup>30</sup> Applying this distinction to Stumpf's case, the contention is that it proves not that the patches of colour *A* and *B* 'seem *not* to have different shades' but only that they 'do not seem to have different shades'; and the latter proposition implies, I take it, that a slight doubt as to the qualitative identity of the shades *a* and *b* is compatible with it, while it is not compatible with the former.

Before proceeding further, it is worth while perhaps, to point out that the view just indicated is almost identical with the doctrine of 'acquaintance' as developed by Mr. Bertrand Russell.<sup>31</sup>

"I say that I am *acquainted* with an object," writes Mr. Russell, "when I have a direct cognitive relation to that object, that is, when I am directly aware of the object itself. When I speak of a cognitive relation here, I do not mean the sort of relation which constitutes judgment, but the sort which constitutes presentation. In fact, I think, the relation of subject and object which I call acquaintance is simply the converse of the relation of object and subject which constitutes presentation."<sup>32</sup> It is to be observed that 'acquaintance' is here said to be a subject-object relation. Yet it is not a subject-object relation in the sense in which we have been using that term. At the most it can only be described as a peculiar species of the subject-object relation. For the contention is that it is a *direct* relation. And by 'direct' in this context is meant, I take it, that the entity to which we have this relation cannot appear to us to have a non-relational property different from that which it actually has. Mr. Russell certainly does not intend to maintain that we may have 'acquaintance' with an entity and yet that it may seem to be different from what in fact it is, that we may be 'acquainted' with an entity which is in fact red and yet appears to us to be green. In the

<sup>30</sup> *Proceedings of the Aristotelian Society*, Supplementary Vol. IV, 1924, pp. 108-9.

<sup>31</sup> Cf. *Our Knowledge of the External World*, pp. 150-51.

<sup>32</sup> *Mysticism and Logic*, pp. 209-10.

second place, 'acquaintance' is certainly for Mr. Russell cognitive in nature. I must be aware of the object itself if I am to have the relation of 'acquaintance' to it. At first sight this would seem to be in contradiction with the assertion that 'acquaintance' is "logically independent of knowledge of truths".<sup>33</sup> For it might be thought that, whenever I cognize a thing, I must be aware of some truth about it. Mr. Russell himself says, "it would be rash to assume that human beings ever, in fact, have acquaintance with things without at the same time knowing some truth about them".<sup>34</sup> The reason why he thinks it *logically* possible that we may be 'acquainted' with a thing without knowing any truth about it is that, according to him, 'acquaintance' is a two-term relation between a subject and an object. If there be only one term, it will be logically possible for the relation of 'acquaintance' to subsist between it and the conscious subject. But knowledge of a truth is at least a three-term relation. It implies at least two terms in relation to the conscious subject. Hence 'acquaintance' does not logically imply 'knowledge about' although 'knowledge about' implies 'acquaintance' with each of the terms that constitute a proposition. "The particular shade of colour that I am seeing may have many things said about it—I may say that it is brown, that it is rather dark and so on. But such statements, though they make me know truths *about* the colour, do not make me know the colour itself any better than I did before: so far as concerns the knowledge of the colour itself, as opposed to knowledge of truths about it, I know the colour perfectly and completely when I see it, and no further knowledge of it itself is even theoretically possible."<sup>35</sup> And it is precisely this circumstance that 'acquaintance' with a thing is not knowledge of any proposition about it that makes acquaintance indubitable. The question of truth or error simply does not arise, since the distinction between truth and error applies only to propositions.

What, now, does this doctrine imply on the psychological side? It implies that there are two separate and disparate mental faculties analogous to those traditionally named sensibility and thought. The one is that through which we become acquainted with sense-data,<sup>36</sup> simple apprehension as Professor Stout calls it. Acquaintance has no degrees. "There is merely acquaintance and non-acquaintance. When we speak of becoming 'better acquainted', as for instance with a person, what we must mean is becoming acquainted with more parts of a certain whole; but the acquaintance with

<sup>33</sup> *Problems of Philosophy*, p. 72.

<sup>34</sup> *Ibid.*, p. 72.

<sup>35</sup> *Ibid.*, p. 73.

<sup>36</sup> And also Mr. Russell holds, with universals.

each part is either complete or non-existent."<sup>37</sup> The other is a discriminating activity, by which the various things, with which we are acquainted and compared with one another and thus yields knowledge of truths. Mr. Russell does not say that there is actually a stage in our mental history when there is bare acquaintance alone without any knowledge of truths. As we have seen, he thinks it unlikely that there is such a stage. Nevertheless, there is no logical contradiction in supposing that there may be. On the contrary, he thinks it quite possible that we should be acquainted with two particulars without knowing any relation between them.<sup>38</sup>

Let us now return to Stumpf's case. If A and B be two patches of colour, which differ slightly in shade but nevertheless look qualitatively identical, then according to the theory just referred to, it may well be the case that we are 'acquainted' with both A and B, although our judgment that they look alike, which is a judgment 'about' them may be mistaken. For the fact that we are 'acquainted' with A and B does not logically involve that we may not make a mistaken judgment about their relations. Indeed, it does not involve that we know any truth about them at all. "To know that two shades of colour are different is knowledge about them; hence acquaintance with the two shades does not in any way necessitate the knowledge that they are different."<sup>39</sup> It is easy to see that this solution of the problem is practically the same as that offered by Dr. Broad.

The fact is that although Dr. Broad speaks of discrimination, differentiation, and so on, he is throughout working on the basis of the distinction between 'acquaintance' and 'knowledge about'. This came out more clearly in his earlier writings. For instance, dealing with the nature of acquaintance,<sup>40</sup> he says that there are difficulties in giving satisfactory examples of the relation of acquaintance, one of the difficulties being that the relation of acquaintance is rarely found alone. He admits that when one suddenly opens one's eyes, one enters into the relation of acquaintance with the sense-data in the visual field. But he does not think that this is a satisfactory example, apparently because almost immediately after entering into this relation with the sense-data in the visual field one begins to discriminate and note distinctions between them. He thinks, in other words, that

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<sup>37</sup> *Our Knowledge of the External World*, New Edition, p. 151.

<sup>38</sup> *Cf. Ibid.*, p. 151.

<sup>39</sup> *Ibid.*, p. 145.

<sup>40</sup> *Cf. "Is there knowledge by acquaintance?" Proceedings of the Aristotelian Society, Supplementary Vol. II, 1919, p. 208 sqq.*



satisfactory examples would be furnished if we could find cases in which the process of discrimination begins only after an appreciable interval subsequent to our entering into the relation of acquaintance with the sense-data. And it is plain that he feels this difficulty because he is identifying acquaintance with simple apprehension; and is supposing that the process of sense-perception consists first in becoming 'acquainted' with each part of the sense-field, and secondly in noticing distinctions between these various parts and comparing them, which second process begins almost simultaneously with the first, although each is distinct and separate from the other. Can this position be sustained?

I do not think it can. As regards Stumpf's case, the point of the contention apparently is that although we judge that the patch A seems to have the same shade as the patch B, whereas in fact *a* and *b* are distinct, there need be no *one* shade, which both A and B seem to have. But can this be legitimately asserted? What is, of course, true is that we may not *explicitly* notice the difference or similarity between two patches of colour, both of which we are immediately apprehending. Thus, I may be aware of two books before me and know that the cover of one of them is green and that of the other red and yet I may not explicitly judge that the colour of the one is different from that of the other. In this sense, I may be perfectly well aware of the colour of an object, without explicitly recognising the *fact about it* that it is different from the colour of a certain other object. Yet when, as in Stumpf's case, a person does *explicitly* judge that both A and B seem to have the same identical shade how is the judgment possible unless either (*a*) both A and B seem to him to have the shade *a*; or (*b*) both A and B seem to him to have the shade *b*; or (*c*) both A and B seem to him to have the shade *c*, which is different both from *a* and *b*? Any one of these alternatives involves that when one fails to notice the distinction between *a* and *b*, either A or B or both do seem to have non-relational qualities inconsistent with those which they actually have. The contrary proposition can only be maintained on the ground that there are two distinct and totally disconnected avenues of knowledge, those namely of acquaintance and of the activity of comparing and discriminating; and that through the one we know A as having the shade *a* and B as having the shade *b*, and that through the other we judge that A and B appear to have the same shade.

If this contention be sound, it forces to the front certain obvious difficulties in Mr. Bertrand Russell's doctrine of 'acquaintance'. 'Acquaintance', Mr. Russell must mean, involves either (*a*) what we have called the subject-object relation or (*b*) the sort of relation that holds between the

conscious subject and what we have called the content apprehended. In the former case, it is not open to him to maintain, as he seems to do,<sup>41</sup> that the object with which the mind is acquainted cannot appear to have non-relational qualities different from those which it actually has (as is clear from Stumpf's instance). In the latter case, he has got to shew that the very same relation can be said to subsist between two terms when one of them is taken to be dependent on the other and when it is not taken to be dependent on the other. He has got to show that between two separately existing entities the relation can be the same as the relation between one existing entity and an entity which is not existent. And I submit that not only is it impossible to show this but its very statement bears the aspect of paradox. It is true that Mr. Russell, at any rate in the *Problems of Philosophy*, appears to think that the apprehending mind can have the same relation to a universal as he takes it to have to a sense-datum although it is worth notice that, in defending his doctrine of acquaintance Prof. Moore allows that the sense in which we are acquainted with universals is essentially different from that in which we are acquainted with sense-data. But, even if one granted Mr. Russell's contention in this respect, it would be no true parallel for what is here in question. On the contrary, the parallel would rather be the relation between the apprehending mind and the concept of the universal, and it is surely obvious that this relation cannot be the same relation as that between the apprehending mind and the universal itself.

It would seem, then, irreconcilable with the fundamental position of the sensum theory to hold that sensa are apprehended through acts of discrimination and comparison; and that, according to that theory, they can only be apprehended immediately or intuitively. But the trouble is that, on such a supposition, it is impossible to offer any satisfactory psychological account of the relation between this faculty of 'simple apprehension', or acquaintance, and the activity of comparing and discriminating which is admittedly involved in all perception. For if 'simple apprehension' be taken to be the way in which the-conscious subject is aware of the content apprehended, it is difficult to understand how, according to the sensum theory, comparing and discriminating come to be involved in perception at all. For, *ex hypothesi*, it will not be the parts or features of the sensum that are compared and discriminated. And, on the other hand, the parts or features of physical objects will not be discriminated because, according to the theory,

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<sup>41</sup> See *Supra*, p. 96.

sense-data are causal products and do not imply a prior act of discriminating and comparing being directed on the physical object.<sup>42</sup>

#### 4. *Problems in Connexion with the Relational Theory of Appearing*

If a theory of sense-perception such as that which Dr. Broad calls a relational theory of appearing is to be defensible, it must be able to account for the contrast which is ordinarily believed to arise between the qualities or characteristics that physical things actually do have and those which they appear to have. And it must be able to do this by recourse to the only principle which it can admit, namely, that the process of apprehending a real object is a developing process which is carried on under certain specific conditions. It must further reject what Dr. Broad has called the causal theory of perception, which is often uncritically assumed by unreflective

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<sup>42</sup> Cf. Prof. Hicks, "Is there Knowledge by Acquaintance," *Proceedings of the Aristotelian Society: Problems of Science and Philosophy*, pp. 165, 166.

"What one is concerned to maintain is that the functions of discriminating, comparing and relating, which no one doubts are fundamental in every developed act of judgment, must be involved, though it goes without saying in an extremely rudimentary form, in even the vaguest, crudest awareness of any content whatsoever, and that a bare acceptance of what is presented, merely because it is presented, would not constitute awareness or recognition in any sense that has ever been attached to those words. Such bare acceptance of what is presented is, however, I take it, precisely what Mr. Russell does mean by 'acquaintance with' an object—a state of mind in which a colour, for example, can be "perfectly and completely" known, just as it is, apart from any distinction of it from other colours, apart from any comparison of it with its surroundings, apart from any relation in which it may stand to that of which it is usually said to be a property, etc. (*Problems of Philosophy*, p. 73). Assume, then, a faculty of that description, and how are you going to account for the emergence of what, in contradistinction therefrom, you agree to call specifically thought or judgment? One of three possible answers might be given. It might be said either that the capacity of judging is present along with that of 'acquaintance' at the very commencement of mental history, or that it is introduced *ex abrupto* at some subsequent stage of that history, or that it is a development from the condition of 'acquaintance'. To fall back on the second of these alternatives would be tantamount, so far as I can see, to relinquishing any attempt at psychological explanation. For I am unable to admit as even an intelligible theory the notion that ideas of relation spring up *de novo*, whenever data, *already* apprehended with definiteness and precision of outline, are to be distinguished from and compared with one another. It seems to me as certain as anything in psychology can be certain that the data in question only are to be for the subject definite and marked off from one another *through the exercise of an activity* which is in essence similar to that, whose mode of origin we are inquiring about. The first alternative, if it be understood to imply that the faculty of judging, as we are familiar with it, is a primordial equipment of mental life, is surely too extravagant and expedient to call for refutation. If, on the other hand, it be understood to imply that the elementary operations of differentiating and comparing are present from the start, alongside of the passive attitude of mere 'acquaintance', then how these could co-exist in a primitive mental life independently of one another would, I think, baffle all attempts to render comprehensible. You would be driven, if I mistake not, to have recourse in the long run, to the third alternative. But I submit that from the attitude of 'acquaintance' in Mr. Russell's sense of the term, to that of believing or judging, in his sense of these terms there is no road."

common-sense, and be prepared with an alternative explanation of the part played by the sense-organs in the process of perception. For it cannot admit, what the sensum theory assumes, that the sense-organs are in any sense causal factors in the production of sense-data, because on that assumption sense-data would plainly be existent entities. The contrast between a physical thing as it appears and as it actually is may arise in four different ways. It may arise in respect of (*a*) secondary qualities, (*b*) primary qualities, (*c*) spatial position and (*d*) temporal position. Furthermore, we shall have to consider the difficulties connected with such abnormal situations as when a drunkard sees pink rats, or when the eye-ball being pressed with the finger two objects instead of one are seen.

## THE CONTEMPORARY ENGLISHMEN'S ESTIMATE OF SHIVAJI

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THAT the Muslims vilified Shivaji is no wonder, for he struck at the very root of their power. But occasionally the Englishmen also vilified him. They sometimes called him a ' thief ', a ' robber ' and a ' rebel ', and at others " the noble Prince Shivaji Raja ". Their opinion varied between these two extremes according to the circumstances.

### 1. Shivaji, " The Grand Rebel "

Shivaji first came into direct contact with the English when he plundered the English factory at Rajapore soon after the Afzal Khan affair (1660). Not only the English suffered a loss here at the hands of Shivaji's men, but some Englishmen were taken prisoners. But they had had no bitter experience from Shivaji personally. Therefore, Henry Ravington, Randolph Taylor, etc., in their letter to Surat say: " . . . . although they (Shivaji's Officers) doe detain Mr. Gyffard and our broker; whom they cann but keepe prisoners so long as we cann have a letter carried to there master Shivaji, who is so great and noble a person as wee believe he will never maintaine this action of deteying any us upon so unreasonable accompt."<sup>1</sup> But soon their opinion changed and they many a time called him by such names as ' rebel ', ' the Grand rebel ', ' a robber ', ' a thief ', etc., some of the extracts to illustrate this are given below:

(a) " Sevagee, a potent rehell in Deccan " (*F. R. Surat*, Vol. 2, p. 16, dated 16th April 1660).

(b) " The rebel Suwasie who had brought his troops close to the capital " (*Dutch Records at the India Office*, Vol. 24, No. DCL XIV, dated 10th June 1660—new style).

(c) " Sovagee, the rebel in Decan . . . . . did lately in his own person . . . . . " (*Oxinden Papers*, dated 25th May 1663, *E. F. India*, 1661-64, p. 238).

(d) " You were unhappily surprised in your residence at Rajapore by that perfidious Rehell Sevage . . . . . " (*F. R. Surat*, Vol. 2, p. 164, dated Swally Marine, 9th October 1663).

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<sup>1</sup> F. R. Rajapore, dated Rajapore the 4th Feb. 1660.

(e) “. . . . . but we knowe not what league to hould with a rebell and perfidious thiefe, but desire to keepe our distance and have nothing to doe with him” (*Original Correspondence*, Vol. 29, No. 3205, dated 24th November 1666; *E. F. India*, 1665-67, pp. 171-72).

(f) “There is our old perfidious enemy, that notorious rebell Seavage has hitherto escaped unpunished for all the villanyes and robberyes done us . . . . .” (*Forrest Home Series*, Vol. I, pp. 22-23, dated Surat, 14 August 1668).

(g) “The archrebel Shivaji is againe engaged in armes against Orangosh . . . . .” (*P. R. Office*, C. O. 77, Vol. XI, p. 185, dated Bombay, 23 January 1670).

(h) “We esteem Sevagee to be the grand and whole author of these commotion . . . . .” (*Orme Mass.*, Vol. 114, Sect. 2, pp. 92-94, dated 15 July 1673).

(i) “Wee heartily wish the forces of that Grand Rebell and greater disturber of the felicity of Deccan, which formerly so fameously flourished in all manner trade, may retire to their strongholds . . . . .” (*F. R. Surat*, Vol. 107, Fol. 118, dated 29 June 1678).

(j) “Comes an hot alarme of that grand rebell Seavage's approach . . . . .” (*F. R. Surat*, Vol. 2, p. 106, dated 6 January 1664). (See also *F. R. Surat*, Vol. 2, p. 126; *P. R. Office Mss.*, C. O. 77/91\*, No. 24; *Original Correspondence*, Vol. 28, No. 30/9; *F. R. Surat*, Vol. 86, p. 106; Vol. 86, p. 170; Vol. 86, p. 106; *Public Record Office*, C. O. 77, Vol. X, p. 61; *Original Correspondence*, Vol. 29, No. 3213; *P. R. O.*, C. O. 77, Vol. X, f. 176; *Original Correspondence*, Vol. 34, No. 3788, etc.)

(k) In the “Log of the ‘Loyal Merchant’” (entries of 5 to 17 Jan. 1664) (*Orme Mss.*, Vol. pp. 263, 23-24) Shivaji has been twice called “the rogue.”<sup>2</sup>

(l) The President and Council of Surat writing to Richard Cradock and factors of Persia (dated Swally Marine, the 22nd January 1664, *F. R. Surat*, Vol. 86, p. 2) use the word “feind” for Shivaji.

The reason for all adjectives has been given by the English factors themselves at various places. Some of these we extract below:

(a) “These continued troubles are very prejudiciall to the Companies (business) for now no merchants will lay out their money in goods, that must

\* In this he has been called villain.

<sup>2</sup> Also in *Original Correspondence*, Vol. 28, No. 3019, dated Surat, 28 Jan. 1664, the President and Council of Surat to the Company.

lie on our hands which we shall endeavour to dispose of the best we can.”<sup>3</sup>

(b) “. . . . in regard of the troubles Sevagy hath made in the adjacent parts, these marketts are dull, and wee feare they will now be as bad at Carwar and those parts . . . .”<sup>4</sup>

(c) “The condition of Rajapore and the inland marts being now in a confused manner in the possession of rebels and dayly new commotions in the land doth dissuade us from engaging ourselves in commerce, for we can have no other assurance then the word of a Thiefe or a Rebel; and so wee leave them untill we shall have a further occasion to speake of those people and the condition they are in at present.”<sup>5</sup>

After its first sack, Surat was in a continuous state of alarm. When after his release from Agra, Shivaji began his conquests, Surat, March 1670, was apprehended an attack by Shivaji. In the course of a communication to Surat the Bombay Council says: “The turbulent state of affaires being soe at present in Surratt that for defence of the Company’s estate and house you have been forced to entertaine divers persons and taken 20 English-men out of the *George* without which men she cannot proceed on her voyage to the southward, and it being resolved by you in Councell to send for 40 souldiers hence to secure your estate and to support the credit and honour of our nation, as well as other Europeans both French and Dutch have done, wee may not dispute your orders though wee can ill spare so many men having *Sevagee* (a friend to none) so near a neighbour to us, who *proceed without any lett in his conquests*, and we hear this day hath taken another castle *from the Mogull called Ponader* (Purander) and surely wee thinke Carnalla cannot hold out long.”<sup>6</sup>

All the same, the English tried to reconcile Shivaji:—

(a) “. . . . by this means he hath also opened a nearer way to Suratt, and it is creditably believed here, that he hath sent his victorious Army thither, if so (which God divert) he will doubtless do great mischief but at the worst we have reason to hope through the overtures of friendship which of late have passed (be) twixt us that he will not attempt any evill to your estate . . . .”<sup>7</sup>

<sup>3</sup> *F. R. Surat*, Vol. 87, p. 87, dated 31st Oct. 1672.

<sup>4</sup> *F. R. Surat*, Vol. 104, p. 190, dated 14th Dec. 1664.

<sup>5</sup> *Original Correspondence*, Vol. 28, No. 3019, dated Swally Marine, 28th Jan. 1664.

<sup>6</sup> *F. R. Bombay*, Vol. 6, p. 8, dated the 29th March 1670.

<sup>7</sup> *Original Correspondence*, No. 3649, dated 12th July 1672.

(b) “. . . . . and wee dare say if he hath a kindness for any nation, its for the English and wee believe he will not disturb any house, where the English flag is . . . . .”<sup>8</sup>

(c) Shivaji's spirit and his attitude towards the English can be best seen in the following extract:

“This is only to advise that Mr. Thos. Nichols is returning from Sevagee who will not own that any of his men have done the least mischief to the English, and therefore he demanded the particulars of what we lost at Hubelly and the name of the person that plundered us, for he declared to be ignorant of any such thing, nor did he give any such order and he further declared that he prosecuted a *just war* in his enemies country, if his army in plundering any of the enemies towns doth unknown to him meddle and seize any English goods he *cannot help it*, for in that hurry and confusion which either his soldiers plundered for themselves or the country people seized on, he is no way in liable to answer. This is what he alledges on his part withall, further as a friend advises us that we trade so little as we can into Decan because he is determined to make a *sharp war* there so soon as the rains are over. However he desires to see the particulars of our loss, which we could not show him having not received it from you. Wherefore these are to desire you immediately upon sight here off to send us the particulars of what the company has lost that we may demand satisfaction and consult the best way to satisfy ourselves. If Sevagee will not comply with our demands, we would have you send the name of the Chief Commander that plundered Hubelly, and likewise who it was that first entered the town, together with all the circumstances of the war, for Sevagee will not believe that any of his men meddles with any of the English goods.”<sup>9</sup>

(d) “Sevagy's people, having taken the old Seroy, could thence more safely ply their shott at our house, for which they prepared, but finding our people resolute in its defence, they held up their hands and desired a parly; the captain of that brigade calling to speake with Mr. Master from the wall; he appared to them and many expostulations past touching our good correspondence at Bombay and enmity at Surat; the captain told him that the Rajah was very much enraged that we had killed so many of his men, nevertheless, if we would keep our men quiet, he would enorder his men not to meddle or shoot at us, and desired that we would send some understanding person to treat with Sevagy, which was agreed upon, and

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<sup>8</sup> *Original Correspondence*, No. 3870, 23rd October 1673.

<sup>9</sup> *Orme Mss.*, Vol. 114, Sect. 2, p. 87, dated 21st June 1673.



accordingly one was sent who was civilly entreated by him, he giving him *his hand or cole for security*, so that Sevagy's people never attempted our house any more, butt at leasure ransackt and plundered all the great houses round about, wherein it is said they found vast treasure and rich goods, and when had got sufficient booty together and burnt downe almost halfe the towne they marched away thinking it *prudence to secure what they had gott*, no army of the Mogulls being heard of all this time, nor is there to this day more than 300 horses come down."<sup>10</sup>

The English, however, find it difficult to anticipate Shivaji's designs. This will be evident from the following correspondence:

(a) "All the news we have is that Sevagee makes preparation to take the Castle of Danda Rajapore to which end besides his land army, he is providing an Armado by sea; but some wise men say that he hath other deeper designs for his Armado, to wit, to invade some of the Kings coast to Nor (th)ward while his Armado is emploed this way. But *his designes are so well layd, and secretly carryed that no judgement can be made of them till they are executed.*"<sup>11</sup>

(b) "The King . . . . hath worsted that *grand rebell* Sevagy, who finding himself overpowered by his sending of numerous armies upon him, hath submitted himselfe, delivering up to this Kings Generall upward of 30 Castles and strongholds together with all the countries belonging to them, and accepted to this King of 5000 horse, yet we cannot heare that he hath resigned himeselfe, personally, but done all this byt reaty, keeping to himself some few of his strongest castles for his retirement. This victory thus obtain'd over him is very pleasing to the King and hath made him way to assault Vizapore, the greate Metropolis of the Deccan, who before was tributary, but refus'd to pay his annual tribute for some yeares whilst Sevagy was powerfull, and stood as a wall and partition between them, who, now that he is worsted, is willing to pay his arrears if this King will withdraw his army from further assaulting him. *And yet tis thought by some that Sevagy hath anafter game to play still.*"<sup>12</sup>

(c) "Wee cannot have any certainty where Sevagee is, yet believe he is not gone toward Suratt, but that rather he makes use of his time in recovering his castles upon the hills, yet shall wee be vigilant and not trust

<sup>10</sup> *Original Correspondence*, Vol. 31, No. 3489, dated 12th Nov. 1670.

<sup>11</sup> *F. R. Surat*, Vol. 107, p. 124, dated 7th Sept. 1675.

<sup>12</sup> *F. R. Surat*, Vol. 86, p. 239, dated 1st Jan. 1666.

him, for *his motions have ever so quick that his designes were rarely yet anticipated.*"<sup>13</sup>

(d) "We are sorry to hear that Sevagee is a foote againe, and that he hath thrown the towne of Suratt into soe violent distraction by his soe neare approaches; *but certainly he is to(o) crasety to attempt it when soe great a noise runs before him, but deferrs his mischiefe untill he hath fled and hardened the towne with falce alarms, that he may the more securely surprise it as formerly.*"<sup>14</sup>

(e) "Being againe allarumed from Bombay of Sevagys great preparations both by sea and land and not knowing whither he may bend his forces, *his designe being kept very private*, wee think it prudence in us to provide for the safeguard of the Honble. Company's island Bombay so well as possible wee cann in this exigency of affairs . . . ."

(f) ". . . . it is confirmed to us from Choule and other parts that overtures of peace are closely prosecuted, betwixt the King of Vizapore and Sevagee who hath a considerable army ready of horse and foote and hitherto maintaines his frontiers against the Mogull and Bullose choune and tis generally concluded that the King of Vizapore and Golocondah do covertly furnish him with men and money, and that he also covertly fees the General and Commanders of the Mogulls Army which hath qualified their heat against him, soe it is thought that no great action will be performed between them this yeare, yet *the preparation that Sevagee makes causeth us to believe that either he expects to be assaulted, or designes to make some notable attempt in the King's Country.*"<sup>15</sup>

(g) ". . . . Sevagee is a subtile and pollitique warrior and fightes close and warily, never daring to meet in the field, but *useth all stratagemes and advantages that he can*, whereby he hath often surprised and witt of many of Siddys men so that they dare not attempt the shore in any place where Sevagee hath any forces to oppose them . . . ."

(h) "The Kingdome of Vizapore is now in a miserable distracted condition, the king being in his nonage and not able to take the charge of the Government upon him; all his Umbraws are devided one against another and in armes. The Moghulls General Bauder Ckawn is gone with his army against the whole kingdom in hopes of a conquest, and Sevagee, who hath

<sup>13</sup> *F. R. Bombay*, Vol. 6, p. 8, dated 29th March 1670.

<sup>14</sup> *F. R. Surat*, Vol. 105, p. 38, dated October 1670.

<sup>15</sup> *F. R. Surat*, Vol. 3, p. 111, dated 29th Nov. 1670.

<sup>16</sup> *Original Correspondence*, No. 3870, dated 23rd October 1673.

<sup>17</sup> *F. R. Bombay*, Vol. 87, Fol. 13, dated 6th Nov. 1673.

alwaies an eye that way but never durst attempt anything for fear of Bauder Ckawn, who continually lay with his armies on the borders of his country, hath now taken the opportunitie to fish in these muddy waters also and sided with Buloe! Ckawn the General of Bijapore."<sup>18</sup>

(i) "The report still continues of Sevagees death (but yet it so much doubted). He was poisoned by his barbar and for a long time hath not appeared abroad, but his army hath lately robbed a considerable mart towne in Deccan called Houttanee (Athanee), neare Raybagg, where wee heare some of your estate is plunder'd, but doe not yett know the certainty thereof. He holds a faire understanding with your Island Bombay and all offices of friendship pass between them."<sup>19</sup>

(j) "Wee can give noe creditt to the report that you have from the Subedarr of Choule, that the Moghull and Sevagee have made, since we have often been deceived by the rumours, and we know always at this time of the yeare Sevagee doth motion and give out such reports on purpose to hinder the Moghull from falling into his country . . . ."<sup>20</sup>

"Sevagee by (the) advice of his Braminyes hath made himselfe King or Sovereigne Prince of his own dominions, and having raised a powerfull army hee seemes to feare noe enemy, but *makes all his neighbors stand in dread of him*, especially the Portuguese to whom he hath given frequent alarms."<sup>21</sup>

Shivaji "fleeces his own Governours:—

"Your Honours fear of Sevagee being soe nigh us may bee noe hindrance to your Honours resolutions for the encreasing of trade in this factory. Sevagee having by small parcells and severall pretences got 4 or 500 men into Goa, hoping by degrees to have double the number, did not question but such a number would be able, upon a suddaine rising in the night, to secure him any one of the passes, whereby he might enter his men before the Portugalls could have raised any considerable army to resist him, (and) did not doubt of carrying it; but after his arrival at Vingurla finding his plot discovered, his men seized, and the Portugall well provided to give him a hott reception, desisted from his designe and went and viewed all his castles thereabouts, changing their men and putting in provitions and ammunitions, which when hee had done, finding all places hereabouts resolved

<sup>18</sup> *F. R. Fort St. George*, Vol. 28, pp. 34–5, dated 1st May 1676.

<sup>19</sup> *Original Correspondence*, Vol. 37, No. 4202, dated 7th April 1676; (see also *F. R. Surat*, Vol. 107, p. 43; *F. R. Surat*, Vol. 89, p. 10; *Orme Mss.*, Vol. 114, Sect. 5, p. 12; *F. R. Surat*, Vol. 89, p. 13; *Orme Mss.*, Vol. 114, Sect. 5, p. 15; *F. R. Surat*, Vol. 89, Fol. 164, p. 17.

<sup>20</sup> *F. R. Surat*, Vol. 89, pp. 90–91, dated 5th December 1676.

<sup>21</sup> *Original Correspondence*, Vol. 35, No. 3990, dated the 20th August 1674.

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o deny him passage and fitted to fight him if he endeavoured to force it; upon which, under pretence of some extraordinary (business) that called him away for Rajaghur (Raj-Gad), hee raised his army and away hee went, and is by this time the best of the best of his way thither, *fleeing his own Governours and servants*, as hee goes along, towards the payment of his army, with which hee hath soe alarmed all this country round about that, notwithstanding hee is gone soe farr *the people are so afraid still that they will hardly bee perswaded to believe the news of his departure can be true*, but we know it . . . . . They (the French) have settled at Rajap(o)r, and have mett Sevagee, who gave them some clothes and a phirmaund to trade freely in all his ports. When they were with him, hee was very inquisitive why the English did not come alsoe; saying that hee would give them all what he had rob'd of them in his customs; but the country merchants told him the English demanded ready mony. Hee shooke his head and said no more."<sup>22</sup>

The English complained against Shivaji's tyranny and cruelty. They say: "Wee judge wee shall drive a very little trade if the country continues subject to Shivaji's tyranny" (*F. R. Surat*, Vol. 107, fol. 167, dated 29th August 1675). Again they say, "Wee are sorry to read that Sevagy should be so terrable." (*F. R. Surat*, Vol. 104, p. 110, dated 8th August 1664). "The rogue was very cruel."<sup>23</sup> All the same, they have to confess: "Sevagee in his own country gives us (as) great encouragement to your trade as we can reasonably desire . . . ." (*Orme Mss.*, Vol. 114, Sect. 4, p. 104, dated 24th March 1675). By this time they seemed to have realised the fact that Shivaji was waging a war against the Muslims for the liberation of his country from a foreign yoke and for the protection of the Hindu religion. This will become obvious from the following reports:

(a) "The same day also were brought letters from Sevagee to the Governours and Mira Mosum demanding the third time (which he wrote should be last) the couty (chouth)  $\frac{1}{4}$  part of the Kings revenues under this Government, declaring that, *as their king had forced him to keep an army for defence of his people and countrey, so that army must be paid* . . . . ."<sup>24</sup>

(b) " . . . . . the greatest part of the town now lyes in ashes, for *his designe was not altogether riches but a revenge upon this King*."<sup>25</sup>

<sup>22</sup> *F. R. Surat*, Vol. 105, p. 76, dated 16th Dec. 1668. This needs corroboration from other historical sources to know whether this opinion is true.

<sup>23</sup> *Original Correspondence*, Vol. 28, No. 3019, dated Surat 28th Jan. 1664.

<sup>24</sup> *F. R. Surat*, Vol. 87, dated the 25th June 1672.

<sup>25</sup> *F. R. Surat*, Vol. 86, p. 64, dated S.M. 19th March 1664.

(c) “. . . . . we should fear that *he would take revenge on that place for we know not where els hee can goe to bear the charge of his army.*”<sup>26</sup>

(d) “Satisfaction could not be honoured, Sevagee declaring that *he was not lyable to make good any losses we sustain in his enemys country whome he prosecuted a just war*; he blamed the Generall of his army much for the violence done us and to the end wee should not be subject to such injuries hereafter he gave us his coles or paste-parts for that place as also for many other factoryes . . . . .”<sup>27</sup>

(e) “. . . . . but that he will ever rob us in his owne country there appears no feare or suspition for it . . . . .” (*Original Correspondence*, Vol. 37, No. 4253, dated 10th January 1677).

(f) “. . . . . he being brought before Shivaji he was asked what hee was and such like questions, and att last by Sevagee told that hee was not come to do any personal hurte to the English or other merchants, but only to revenge himself of Oronzeb because hee had invaded his country (and) had killed some of his relations, and that hee would only have the English and Dutch give him some treasure and hee would not meddle with their houses; els hee would do them all mischief possible.”<sup>28</sup>

## 2. *The Growing Strength of Shivaji*

Having enumerated what charges the English levelled against Shivaji, we now proceed to give what good things they had to say about him.

(a) “Sevagee is not so slothful as the Mogull forces, for *he not only makes hay whilst the sun shines, but then when it is obscured by violent raines also.*”<sup>29</sup>

(b) “*Sevagee suffers not his neighbours to rest even in this dead of the raines*, having surprised the Countrey belonging to two Rajahs, called the Radjah of Guar (Jawhar), and Ramnigar (Ramnagar) . . . . .”<sup>30</sup>

(c) “. . . . . the restless spirits of Sevagee not suffering his neighbours to live in quiet, who, taking advantage of the King of these Countrys death and the infamy of his successor and factions among the nobility, invaded the kingdome with a very formidable army . . . . .”<sup>31</sup>

<sup>26</sup> *F. R. Surat*, Vol. 107, fol. 68-69, dated 27th Feb. 1675.

<sup>27</sup> *Original Correspondence*, Vol. 36, No. 4175, dated 2nd Feb. 1676.

<sup>28</sup> *Sloane Mss.*, No. 1861, dated Surat 28th January 1664.

<sup>29</sup> *Original Correspondence*, No. 3649, dated 12th July 1672.

<sup>30</sup> *Original Correspondence*, Vol. 34, No. 3904, dated 8th December 1673.

<sup>31</sup> *F. R. Surat*, Vol. 88, p. 37-8, dated 22nd April 1675.

(d) "As to Sevagee, he settis all wheeles att worke, for while he is prosecuting a designe at Punda, his forces that went aloft have plundered three great cities . . . . ."

(e) ". . . . . but he hath many irons in the fire which find him employ a considerable time . . . . ." <sup>32</sup>

(f) "Sevagee, a gentowe of greate power in Deccan, raiseth an army in January last to oppose the now reigning kinge there, and (hath ?) taken many townes there, among which was Rajapore." <sup>33</sup>

(g) "Decan and all the south coast are all embrouled in civill warrs, king against king and country against country, and Sevagy raines victoriously and uncontrolled that *hee is a terror to all the kings and princess round about, daily increasing in strength.*" <sup>34</sup>

(h) "Wee have already advised that the rebell Sevagy continues in greate power and force, and much feared by all. He hath committed many notorious and greate robberies since that of Surat . . . . ." <sup>35</sup>

(i) "The Mogull is sending a great army against the King of Vizapore, which, being oppressed by the rebell Sevage, called to aid the King of India, who, freeing him from further feare of Sevage, (he) hath slipt his neck cut of the choller, and left them two to grapple, *looking upon Shivaji as a bulwarke against the King of India*, and hath privately assisted him with money to carry on the warr, himself not sending any force against him, for which, reasons the king of Vizapore <sup>36</sup> (Consul Launoy to the Earl of Winchilsea, dated Aleppo, 14th April 1665).

(j) "The many troubles which at this time the whole kingdome groans under hath rendered the wayes and passages up into the countrey very unsafe and dangerous, the thieves and inland Rajah taking this opportunity of plundering eaphilas and robbing merchants, and *all under the name of Sevagy.*" <sup>37</sup>

So it is clear that the name of Sevagy was a terror to the Muslims. He was equally feared by the English.

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<sup>32</sup> *Original Correspondence*, Vol. 36, No. 1439, dated 26th Nov. 1675.

<sup>33</sup> *Factory Records Surat*, Vol. 85, p. 108, dated Surat, 6th April 1664.

<sup>34</sup> *F. R. Surat*, Vol. 86, p. 137, dated 26th Nov. 1664.

<sup>35</sup> *F. R. Surat*, Vol. 86, p. 170, dated 12th March 1665.

<sup>36</sup> *Report on Finch Mss.*, Vol. 1, p. 366.

<sup>37</sup> *F. R. Surat*, Vol. 3, p. 55, dated 31st March 1670.

(k) "The notable progresse of Sevagy in his conquest of Mauley, etc., castles, now in the blustering time of the raines, makes his name more terrible to Surat."<sup>38</sup>

(l) "*Sevagee is threatened very much this year; the Mogull is coming against him with a great army on one side and the King of Vizapore on the other, and Siddy Sambolee with a fleet at sea, which seizeth and maketh prizes of all his vessells they can meet with, notwithstanding all which Sevagee despiseth and beareth up himself manfully against all his enemies and lately has taken a very considerable castle called Satarra in the heart of the Vizapore country, from whence he has received a great quantity of rich spoil.*"<sup>39</sup>

(m) "And the President moveing also to the Councill how prejudiciall it might be to the Company's interest if some of his requests were not granted, he having made himselfe very very potent and in whose country lyes now a great part of the Company's trade."

3. Shivaji, "*the fairest friend, noblest enemy and the most Politique Prince*"

As Shivaji's power increased, the English began to look upon him with awe and respect and were prepared to please him as circumstances could permit.

(a) "The Dutch with their powerfull Fleete have to have swallowed us up, but blessed be God who hath hitherto preserved us, and rendered all their evil designes advantageous; Sevagee onely hath proved, and that for his own interest sake, *our fairest friend and noblest enemy* . . . ."<sup>40</sup>

(b) "Yet wee dare say that *if he hath a kindness for any nation, its for English, and we believe he will not disturb any house, where the English Flagg is*, but he plainly declares (w)hat he finds out of the English house he is in noe way answerable for to make any restitution."<sup>41</sup>

(c) ". . . . he hath robbed about 8,000<sup>42</sup> pags. of your estate there also, but he will acknowledge noe such thing and will not make satisfacton for it in regard there were English there to own and protect said goods, yet we hope in true to bring him composition and allowance for that also, for *he is much a friend to our nation, if to any* . . . ."<sup>42</sup>

<sup>38</sup> F. R. Bombay, Vol. 19, pp. 27-28, dated 10th July 1670.

<sup>39</sup> Orme Mss., Vol. 114, Sect., 2, p. 251, dated 4th October 1673.

<sup>40</sup> Original Correspondence, Vol. 36, No. 4116, dated 28th Sept. 1675; from Surat to Bombay.

<sup>41</sup> Original Correspondence, No. 3870, dated the 23rd October 1673.

<sup>42</sup> Original Correspondence, No. 3910, dated 15th December 1673.

In spite of the good the English got out of Shivaji, they were yet mortally afraid of him :

(a) " and what we would lament is that we cannot foresee any termination of his government, for *he will continue victorious even to a miracle*, waging war against the potent Kings of Hindustan and Deccan, against which he has hitherto proved very victorious even to a miracle, waging war with them and we are fearful will continue so."<sup>43</sup>

(b) " Sevagy is so famously infamous for his notorious thefts that *report hath made him an airy body, and added winges* or else it were impossible *he could be at soe many places as he is said to be at, all at one time*,"<sup>44</sup>

(c) " *Sevagio hath dyed so often that some begin to thinke him immortall*.

Its certain little beliefe can be given to any report of his death till experience shews it per the winning of his hitherto prosperous affaires, since when he dies indeed it is thought he has none to leave behinde him to carry on things att the rate and fortune he has all along done."<sup>45</sup>

(d) " Sevagees death is confirmed from all places yett some are still under a doubt of truth, such reports having been used to run of him before some considerable attempt, wherefore shall not be to(o) confident until well assured."<sup>46</sup>

(e) " . . . . . but the Siddy Sambole hath an evill designe in writing those lyes and aspersions against us, for having received a great deal of service at all against Sevagee, he must invent a greate deale of money from the King's force and Bauder Ckawn to whome I understande that he hath wrote that he hath taken several castles and burnt severall townes and killed a grate many of Sevagees men. All those are mere forgeys and fallcityes, for he hath not done Sevagee any mischief in the least, rather he hath been beaten and lost a greate many of his men, and the most he can brag of he hath burnt a few cajahn houses belonging to Coolyes and Corumbins and fishermen that lived near the waterside: some whereof he hath taken prisoners and sold for slaves, and this is all he hath done or is ever like to doe against Sevagee for *Sevagee is a subtile and pollitique warrior and fights close and warily*, never daring to meet in the feild, but useth all stratagems and advantages that he can, whereby he hath often surprized and cutt of many of Siddys men so that

<sup>43</sup> *Orme Mss.*, Vol. 114, Sect. 7, p. 3, dated 15th Jan. 1678.

<sup>44</sup> *F. R. Surat*, Vol. 86, p. 102, dated 26th June 1664.

<sup>45</sup> *F. R. Bombay*, Vol. 19, p. 6, 2nd Set, dated 7th May 1680.

<sup>46</sup> *F. R. Bombay*, Vol. 1, pp. 83-86, dated 15th Sept. 1673.



they dare not attempt the shore in any place where Sevagee hath any force to oppose them.”<sup>47</sup>

(f) “As to the present condition of Sevagee whom the Gentlemen of the Suratt Counsell affirme to be in a sad perplexed condition by means of Bullooll Ckawn coming on the one side and the Moguill army on the other, and therefore they conclude him incapable of doing any mischief to this Island and consequently there is no necessity of dissembling and keeping fair with him. To which wee answered that they are mistaken in their intelligence, for Sevagee is not in so ill a condition as they wrote him to be, he rather dispiseth and bareth up himselfe manfully against all his enemyes and lately hath taken a very considerable castle Sutarra in the heart of the Vizapore country, from whence a number of oxen are lately come to Rairee laden with rich spoys.”<sup>48</sup>

(g) “The confidence wee have of your prudence encourageth us to recommend this affaire to your management wherein you must employ your best care and caution, for you are to treat with Sevagee one of *the most politicke princes of these eastern parts* . . . .”<sup>49</sup>

(h) “We hope to prevail with him for some allowance, but how much we cannot assure ourselves of, his great successes having made him as high in his own thoughts as he is reputed in the eyes of the world . . . .”<sup>50</sup>

#### 4. Shivaji Compared to Cæsar, Alexander, Sartorius and Hannibal

“Sevagee Raja, carried on by an ambitious desire to be famd'd mighty conquerour, left Rairi, his strongest hold in the kingdom of Duncan at the latter end of the last fair Montzoone, and marched with his army consisting of 20,000 horse and 40,000 foote into Carnatak, where the Telingas have two of the strongest holds in those parts called Chindi (Gingy), Chindawer (Tanjore), where many merchants are considerable inhabitants, and *with a successe as happy as Cæsars in Spaine*, he came, saw and over-came, and reported soe vast a treasure in gold, diamonds, emerlads, rubies and wrought corall that have strengthned his armes with very able sinewes to prosecute his further victorious designes. Hee is at present before Banca Pore, two other very strong ghurrs or rocks, which so soon as he hath taken in (being noe lesse dextrous thereat than Alexander the Great), for by the agility of his winged men (himself terming them birds) he tooke in lesse than

<sup>47</sup> F. R. Bombay, Vol. 6, pp. 251-2, dated 7th Nov. 1673.

<sup>48</sup> F. R. Bombay, Vol. I, pp. 83-86, dated 15th Sept. 1673.

<sup>49</sup> Original Correspondence, Vol. 22, No. 3585, dated Surat 25th Sept. 1671.

<sup>50</sup> F. R. Surat, Vol. 106, No. 105, dated 14th May 1672.

(sic ? then) 8 months, time from the Mogull which he had delivered up to his than (then) General Raja Jestig, 23 (inaccessible ones) resolves against Vizapore, the Metropolis of Deccan propinque to them; and being become master thereof, *has vowed to his Pagod never to sheath his sword till he has reached Dilly (Delhi) and shutt up Orangsha in it.* Mora Punt, one of his Generalls, hath alsoe of late plundered Trumbeck Nasser (Trimbak Nasik) and other considerable places within the Mogulls territoryes which hath added much to his treasure."<sup>51</sup>

"Soe soone as he was interred and news thereof brought to Vijapore, Jemshett Ckawn who in Company with Serja Ckawn and Delil Ckawn, the Great Mogulls Generall, intends to march against Sevagee with 80,000 horse, with resolution to destroy him utterly. But *'tis too well known that Sevagee is a Second Sertorius and comes not short of Hanniball for stratagems.* And no longer than this very day, arrived news from the Lascar or Army that the King of Goloconda, Deccanies and Sevagee have very lately made a confederacy against the Mogull and are now resolved to beat Delilokawn out of Deccan, Sevagee having gotten 10,000 horses togeather to come upon the back of him and was the only politician that diverted the Deccanies and Cuttub Shaw from joyning with Delil Ckawn against him."<sup>52</sup>

### 5. Shivaji, the Maharaja

As Shivaji's power and kingdom increased, the English thought it politic to honour him and his officers. To some extent, his successes, increase of power and territory and increased contact with the English brought about a definite change in their attitude and behaviour towards him. Therefore, "the Grand Rebel," "The rogue", "The perfidious thief" changed into "Maharaja", "His Excellency" and "His Highness". Some extracts to show this are given below:

(a) "After I had taken my leave of your Worshipp I was coming towards Valigundapuram, and hearing that his Highness Sevogee Raja followed after Sier Cawn by Punamule way, I went thither allso, and whereas Sevage Raja went directly to the place called Bonaguirypatam, I went thither to him, where I was very glad when he saw them and presently sent for the former Maldivo coconutts you sent and had it compared with this your Worship sent him now, which finding to be very good, was highly pleased with it, concerning which and of some other passages hereabouts I have

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<sup>51</sup> *Original Correspondence*, Vol. 38, No. 4314, dated 16th Jan. 1678.

<sup>52</sup> *Original Correspondence*, Vol. 38, No. 4314, dated 14th Feb. 1678.

sent to acquaint your Worshipp by our pattamar Brameny Kishna by word of mouth.

“ His Highness Seavage Raja has now settled his army by the bank of Goloron river at a town called Tirumada Wada where I am allso at present. The three yards of scarlet your Worsp. sent I have presented the same to Sovagee Nague, I shall alter this give you notice also of the broad cloth I brought.

“ Here came an Higyb from the Nague of Madue, to whom *his Highness* Shivaji Raja spake that his master bore a sign of being worth 900 lacks, whereof he should give him for the present 100 lacks for his expences, to which the said Higyb answered that part of his masters country the Nague of Misur (Mysore) had taken and part Yekagee, wherefore he was notable to give him any thing at present, and that if he would restore him back the said country he will give seaven lacks. These are the news at present here. The Nague of Madure has sent all his family while the river Colorun remaines full they fear nothing, but afterwards God knowes what will be done.”<sup>53</sup>

(b) “ The *honored* Bhimagee Pundett, with Narasinnay, is this day arrived at Bombay, who delivered me *your Excellency's* letter, by which I understand you were in good health, which I esteemed very much. Likewise they informed me about the businesse past concerning Rajapore, that *your Excellency* would make an end of it, for which you had given order to the said Bhimagee Pundett whereof I was very glad.

“ I was certain that when *your Excellency* tooke this businesse in hand that it would be ended, and all the losse that the English susteined in Rajapore satisfied; but the said Bhimagee Pundett is very prudent in negotiating on your parte to our prejudice and to the contrary I would not argue anything because there should bee noe difference in our friendship, and for this reason I doe onley to please *your Excellency* accept of the sum of 10,000 Pagodoes, though our losse was greater, to be paid as followth (vizt.) 7,500 Pagodoes in ready money and 2,500 to be discounted in the customes at Rajapore. Concerning other particulars treated by Bhimajee Pundett with mee there shall be no faile on my parte nor in any business of yours that may happen hereafter, and in the same manner (t'is reason) you should treat with mee.

“ The present you was pleased to send me I received with great joy; at present our English ships are not arrived that I might send you some

<sup>53</sup> F. R. Surat., Vol. 107, Fol., 118, dated 29th June 1678 ; Carwar to Surat.

curiosities. The bearer hereof Narasinnay will present to *your Excellency* one Arabia horse, and some other things which will serve for your servants."<sup>54</sup>

(c) "The agent having received another letter from *Sevagee Maharaja* of the 25th May last from his leagure at Raja Vealour, wherein he thankfully accepts of the present of Cordialls and counterpoisons sent him as per Consultation of 14th May and desires a further supply of the same, and other sorts, assuring us of his friendship and offering the price for them, it is resolved to be for the service of the Honble. Company that we gratify his request, and having used diligence and procured the following particulars to the vallue of Pagodas 52·21·5 that we send them unto him by our camp Bramany Ramana with a civil letter as in the Golconda register, not requiring the mony but making a present of them, his power increasing and he exercising so much authority in the King of Golcondas country that he sends all about to receive the King's rents by his own people and punishing the Avaldars and great men of the country at his pleasure."<sup>55</sup>

(d) "To his *Highness* Sevagee Raja,

We received *your highnesses* letter and Tashrifs with all respect. Wherin your kind acceptance of those cordialls and contrapoysons was beyond their merit, which seeing *your highness* has such an esteem for, we have used all possible diligence in the neighbouring parts to accomplish your desire, wherein, although it has cost some time, we have been so fortunate as to procure you some other precious roots, a further supply both of Maldivo cokanutts, cordiale stones and some other precious roots, all sent by our Brameny, whose particular vertues and directions goe herewith. Wee entreat you to them to your Highness; and as to the settlements which our Honble. Employers have allready in your dominions obliges us to wish you all desirable prosperity, so the great honour your noble atcheivements acquires you from all men who shall attaine our inclinations allso, and we do so highly prize the oppertunitys of doing you such services as fall within the narrow compass of a strangers power that we account it as an instance of your kindness that you are pleased to impart your mind, which we receive with all the resentments of a passion that must ever be pressing ourselves.

MY LORD,

*Your Highnesses most humble most*

*Obedient Servant,*

WILLIAM LANGHORN."<sup>56</sup>

<sup>54</sup> *Original Correspondence*, Vol. 34, No. 3951, 1674 A.D. ; President Angier to Shivaji.

<sup>55</sup> *F. R. Fort St. George*, Vol. 1, p. 10, 4th Set, dated 18th June 1677 ; Consultation at Surat.

<sup>56</sup> *F. R. Fort St. George*, Vol. 27, p. 28, 3rd Set, dated 19th June 1677 ; From Fort St. George to Shivaji.

(e) "I have your dated the 16 June together with the Phirmaunds and Tashrif's his Highness sent, which we have received with all the honour this place was able to express. We doe now write both to his Highness and Maddana concerning the ill-behaviour of one of the Divans Bramanys named Madananpantulo, who remains at present with Sevagee Raja, and likewise concerning Brameny Poddela Lingapa for redemanding the goods that was delivered to us by his Highness and Madana's orders, belonging unto a boate which was drove ashore at Chikaricody, which for your better understanding of the business I send you now herewith copyes thereof whereby you may both acquaint his Highness and Maddana procure their order to the said Braminys to forbare all such doings towards us, who are the Devans real and faithfull friends."<sup>57</sup>

How he loved his country, which to him meant a country of the Hindus only, we have already shown. He was of course not partial to anyone. He had many Muslims in his service and the head of his navy was a Muslim. From this view-point, he was above communalism. But he could not tolerate the conversion of his Hindu bretheren to either Islam or to Christianity. It has already been shown that in Sivaji's first plunder of Surat, the motive, according to the English people of that place, was one of vengeance upon Aurangzeb rather than riches.<sup>58</sup> The underlying reason for vengeance could mainly be the religious policy of Aurangzeb. The religious policy of this great Moghul became more and more rigourous as time went on and became perfectly clear to all, even to the English, by 1668 A.D. This can be seen from the following reports:<sup>59</sup>

(a) "This Kings every daies more precizenss in his Mahometan religion hath greatly disturbed the whole Kingdome; there now lying a heavy persecution, upon the Banians and Gentues more espetially, and generally upon all that are not of his eronious opinion, that it hath greatly obstructed their dealings one with another. For if a Mahometan have a desire to discharge his debt to a Banian its but telling him that, if ever he make demaund or trouble him for his mony, he will complaine to the Cozzy, or Justice of the Law, that hee hath called their Prophet names or spake cintumeliously of their religion and produce a falce wittness or two (of which the towne is full), and *the poore man is forced to circumcission and made a Moore*. And thus they served several, to the great terrour of all. Nay, they are become so insolent, by the countenance received from the King, that beggars (of which

<sup>57</sup> F. R. Fort St. George, Vol. 27, p. 29, 3rd Set, dated 27th Sept. 1677.

<sup>58</sup> F. R. Surat, Vol. 86, p. 64, dated 19th March 1664.

<sup>59</sup> P.R.O., C.O., Vol. X, f. 176, dated the 22nd Jan. 1668.

the country swarms) doe daily enter into Banians howses, using great immodesties, and will not be perswaded out untill they have given whatever they ask; this King not at all minding any thing of his Kingdom, but gives himselfe wholly, upon the converting, or rather perverting, the Banians, etc., and pulling down the places of their idolatorious worship, erecting muskeets (mashid mosque) in their roome . . . .”<sup>60</sup>

(b) “ You have been formerly advised what unsufferable tyranny the Bannians endured in Surat by the force exercised by these Lordly Moors on account of their religion the sweetness of which the Cozzy and other officers, finding by the large incomes paid by the Bannians to redeeme the places of idolatrous worship from being defaced and their persons malice, did prosecute their covetous avenges with that frequency and furious zeale that generall body of the Bannians began to groan under their affliction and to take up resolves of flying the countrey. A newpew of your ancient Sheroff Tulcidas Parrack was among others in veighed and turned Moor which was a great heart breaking to your Bannian servants and some dishonour to your house afterwards about the 20th, 7ber (September), a Persian scrivani who formerly had relation to your family was forcibly circumcised for no other reason but that 5 years past he had eaten part of a watermelon which the Cozzy had eaten of, which argument it seems for want of better served the Cozzy’s turne but the poor Bannian as tis said killed himselfe for grief *this violent action makes the Bannians sencible af their common danger and resolved they are to leave the Town* but before they would undertake it five of the most eminent with your chiefe Broker Bingee (Bhimji) Perrack in the behalfe of all the rest came early on the 22nd to your servant Gerald Aungier declaring with all the symptoms of an enflamed passion their miserable condition imploring his assistance and protection on your Island Bombay in case they did or could fly thither, Gerald Aungier was somewhat surprisid at the motion wherein though he saw a great advantage might accure to your Island yet the present conjuncture did not appear safe to enter on such an action in regard you had above 1200 tuns of goods here in your several Factorys all which would have been embarqued your ships loose their voyages and lie on demurage and your Island Bombay would have become an eye sore to the King against whose vast forces, it would be impossible to defend ourselves in regard of its naked week condition at present wherefore farther many obligeing expressions of comfort and assurance of our freindship he told them that your ships not being yet arrived

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<sup>60</sup> *Original Correspondence*, dated 23rd Dec. 1669; from President at Surat to the E. I. Company.

we were in an ill posture to engage in such great design nor was Bombay as yet fortified sufficiently to protect them against the fury of so great a Prince wherefore he advised them convey themselves at present towards Ahma: (dabad) and from thence make their generall humble requests to the King who would certainly ease their present burthen in some degree though they must never expect to be safe in this Countrey and hereafter as occasions offered they might with more and security convey their Estates and Families to Bombay by degrees where they might assure themseves of all favour, freindship, freedom in their religion and encouragement in their tarde as they could in reason expect from us."<sup>61</sup>

(c) "This Port of Surat hath of late suffered under some accidental revolutions which seeme fatal as to the trade thereof, *the tyrannous force which the Moors have put on the Bannians in matter of religion* had long before alarmed them to provide for their safety, but it was the 25th September last before they could resolve on it when the chiefest heads of all their families fled the Towne and retired to Broach from whence they have sent their complaints to the King who hitherto hath not determined anything concerning their grievances their flight hath caused an universall decay of trade not soon recoverable in regard of the Jealousies and distempers which such nationall breaches do produce naturally in all commonwealths nor can you otherwise expect but that your affairs here have all suffered in so comon a calamity though blessed be God not so much as might well have feard, as an addition to the impoverishing of this Towne the merchants have received vast losses by seizure of their vast jounks and goods in them by the Arrabs and Portugalls in their warrs as also by the troubles which have hapned at Bussora between the Turks and the Bashaw of the place which have rendered that Citty almost desolate."<sup>62</sup>

(d) "The archrebel Sevagee is againe engaged in arms against Orangsha, who, out of a blinde zeale for reformation, hath demolished many of the Gentues temples and forceth many turne Musslemins. Hee hath taken severall of Sevagees castles and intends to pursue him to extremity. No preparations are wanting on his side to regaine his castles, and Decan is like to bee the seat of warre."<sup>63</sup>

It will be clear from the above that the plight of the Hindus in Aurazeb's dominions was worst possible. They were forcibly turned

<sup>61</sup> *Original Correspondence*, No. 3373, dated the 26th Nov. 1669 ; from President at Surat to the Company.

<sup>62</sup> *Original Correspondence*, dated 23rd Dec. 1669 ; from the Presidency at Surat to the East India Company.

<sup>63</sup> *P. R. Office*; C. O., 77, Vol. XI, 185, dated Bombay 23rd Jan. 1670.

Muslims and temples were demolished. Shivaji therefore justified himself by looting and plundering Surat as he did twice and holding out further threats of attack. It is clear from the English Records that the English were not partial to Shivaji. Sufficient quotations have been cited in support of this view.

It was probably to the religious persecution that Shivaji referred when he wrote to the Moghul governor of Surat, "declaring that, as their King had forced him to keep an army for the defence of his people and countrey, so that army must be payd and if they sent him not the money speedily, he bid them make ready a large house for him, for hee would and sitt down here, and receive the rents and customes, for there was none to stop his passage."<sup>64</sup>

The Portuguese followed an exactly similar policy to turn Hindus to to Roman Catholic Christianity. This does not mean that the English did not have this temptation at all. But they had learnt a lesson from the history of the Portuguese colonisation in India and therefore desisted from doing anything of the kind. But the Portuguese even as bigotted as the Great Moghul Emperor, and therefore Shivaji had to adopt similar harsh measures against them for the protection of the Hindus. This can be seen from the following:

(a) "Sevagee, deeply resenting this rigour, invaded the precincts of Bardese, not far distant from Goa, and there cut off the heads of four padres that refused to turn Moretto's (Marathas-Hindus) of his owne persuation, they having councelled the destruction of all that were not opinionated as themselves; *which so terrified the Vice-Roy that he forced to revoke his fierce and severe edict.* He (Shivaji) burnt and destroued all the country, and carried away 150 lacks of pagodaes."<sup>65</sup>

Thus Shivaji forced the Viceroy of Goa to revoke his order regarding conversion of the Hindus to the Roman Catholic Christianity. But the Portuguese again began their old policy.

(b) "Sevagee and they (the Portuguese) daily quarrell, the chiefest cause of his hatred to them being for forcing orphans of his cast to turn Roman Catholicks. There has also of late happened some disputes among them in the same account 'the Captain General of Bussean taking part of some orphans against the Jesuits, and forcing the said Jesuits to restore the said orphans a considerable estate, which they had been possessed of many

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<sup>64</sup> F. R. Surat, Vol. 87, pp. 47-49, dated 25th June 1672.

<sup>65</sup> P. R. O., C. O., 77, Vol. X, F. 148, dated Goa, 30th November 1667.



years which they highly resented. One dispute brought on another, and these quarrels increased daily. At last, some of the inhabitants belonging to one of the great Dons towns, flying to the Jesuits for succour, the Captain General sent to demand them. They denied to deliver them up; the General incensed fires one of their towns and burnt about 6 to 8 houses. The Pardrees make no resistance, but fly to their Pens, hope to get him excommunicated from Rome, and so at present remains quiet."<sup>66</sup>

(c) "Many families of Braminies daily leaving the Portuguese territories and repair higher frightened by the Padrees, to upon the death of any person forces all his children to be Christians and even some of the chiefest, who still live Bussim and other places built them houses here, therein placing their wives and children against a time of danger."<sup>67</sup>

It will be clear to every one that Shivaji tried to protect the Hindus both from the Muslims and the Portuguese. Therefore, it can be said that Bhushan's description of Shivaji as the Champion of the Hindu faith is very correct.

#### 6. *Did the English Think Shivaji to be a Literate Man?*

The answer to this question is a strong 'yes'. In support of this, the following extracts can be pointed out:—

(a) "Therefore we pray that theis may come into your hands" (*F. R. Rajapur*, p. 109, dated Rajapore 13 Feb. 1660).

(b) "Let Hossan or any other that brings the letter for Sevagi enquire about Basseen, where Sevagi is, and thither carry the letter and deliver it into his own hands; for we fear these Bramans make letter speak what they please, and send us copy of it in English" (*Orme Mss.*, Vol. 155, pp. 1-21, dated Soangur (Songarh) the 10th June, 1661).

(c) "Yesterday arrived a letter from the Rajah written *himself* to Rougy, giving him an account how that he himself with 400 choice men went to Shasta Ckawns camp" (*F. R. Surat*, Vol. 103, p. 268, dated the 12th April 1663); (*E. F. India*, 1661-64, p. 236).

(d) (i) "We have received a kind letter from Sevagee *himself*."

The word 'himself' is noteworthy; we believe it refers to a letter written by Shivaji himself.

(ii) "Wee herewith deliver unto you letters to Shivaji, Annagee Pundett and to Pilagee, which you are to deliver to them with your own

<sup>66</sup> *Original Correspondence*, dated 26 November 1675.

<sup>67</sup> *Orme Mss.*, Vol. 114, Sect. 6, pp. 6-9 and 15, dated 24th Jan. 1677.

hands and to procure an answer thereunto with all speed" (*Original Correspondence*, Vol. 34, No. 3786, dated 17th May 1673).

In this passage two points are noteworthy. Firstly, there are separate letters for Annaji Pandit and Pilagee. If Shivaji had not been literate, a separate letter addressed to him would not been necessary and sensible. Just after the above sentence, follow these sentences—"In case Sevagee himself be not there, you are to apply yourself to his son or whoever is chiefe in command and to endeavour that you may gaine a speedy dispatch . . . ." Secondly, the letters are to be delivered "to them with your own hands". Now these instructions could have meaning only when Shivaji was literate and not otherwise.

(e) "We have advised your Honrs. in our letters of the 23 October of our treaty and conclusion of peace of Sevagee which tho' fully agreed on between the Envoy and us, is not yet signed and cofirmed by Sevagee himself, in regard he has been absent, near three months from his country . . . ." (*Original Correspondence*, 3910, dated 15th December 1673).

In this extract we notice a direct reference to Shivaji's signature which could not be put on the treaty on account of his absence from the place.

(f) "I intended to have sent Shivaji's writing and orders by this bearer, . . . ." (*F. R. Surat*, Vol. 88, pp. 78-83, dated Rairy 4th April 1674).

Here there is a reference to "Sevagi's writings"—which words could have meaning only if Shivaji was literate.

(g) "Severall writings being sent by Naran Sinay, *signed by Sevagy* in order to the concluding of the Rajapore differences and confirming a peace between the English and him, being translated into English and publicly read, some things therein were found to be superadded thereunto more then what was consented unto . . . ." (*F. R. Bombay*, Vol. I, pp. 30-31, dated 8 May 1674).

In this extract again there is a reference to Shivaji's signature upon the treaty which must have been written in Marathi and, then, translated into English.

(h) To the above there is again reference in "Instructions to Henry Oxinden (*Original Correspondence*, Vol. 35, No. 3963, dated Bombay 11th May 1674). The words are, "In the contract *signed by Sevagee* wherein he promiseth to pay 10,000 Kings Pagodhas for the satisfaction of the Company's loss sustained at Rajapore, there are some things mentioned which are more than wee agreed to in our Treaty with his envoy . . . ."

(i) In Oxinden's narrative (*Original Correspondence*, Vol. 35, No. 3965, 13th May to 13th June 1674), there are good many sentences which go to show Shivaji's literacy:

- (i) "I presented him with the Articles which wee brought for the *Rajah to signe*, translated in the Moratty Language."
- (ii) "This day I sent our Linguist Naransinay to Naragy Punditt to enquire what he had translated in our business touching the *signing* our Articles, etc., who returned answer that the Rajah stopt his to all affaires whatever, and differred them till his coronation was over . . . . ."
- (iii) " . . . that as soon as possible after the Rajahs Coronation he would get the Articles signed and dispatch us . . . . ."
- (iv) "9 and 10 (June 1674). Every day solicited Naragy Punditt *to get our Articles signed* and dispatch us the raines being set in violently. He returned answer that he would loose noe opportunity, carrying them always about him, but that the Rajah was totally taken up in the distrubition of his almes to the Brahins."
- (v) "June 11th. Naragy Punditt sent word that the Rajah had graunted all our demands excepting our money passing current in his country, which hee accounted needless and had signed them; that tomorrow the rest of the ministers of State would signe them, and then wee might depart as soon as we pleased."
- (vi) "June 12th. This day the rest of the ministers of State signed to the Articles."
- (vii) "13 (June 1674) Departed Rairy Castle, and 16th Ditto. arrived at Bombay and delivered his honour, etc., the Articles of peace *signed and ratified* by Sevagee and his ministers of State . . . . ."

In the above passages, there are good many references to Shivaji's signature, So, Shivaji's literacy seems to be a fact. Had he not been literate, there would been no necessity for Naragy Punditt to carry the Articles "always about him" for his signature so that in the midst of Shivaji's occupation in the coronation ceremony he might find an opportunity to get his signature. Moreover, there is a separate reference to the signature of the Ministers of State. The entry for June 11th is especially worthy of note. After Shivaji had granted all the demands except two, he signed them and the ministers of State signed them the next day. All this, when impartially considered, leaves no doubt about Shivaji's literacy.

So it is clear from the above extracts that the English people of Shivaji's time, especially those that came into contact with him, definitely knew that Shivaji was a literate man. On the other hand, there is no reference in the English Records that he was an illiterate man. Sir Jadunath Sarkar says that whenever a paper was presented to Shivaji, he passed it on to his ministers in order to be read out to him.<sup>68</sup> The only references of this kind to some extent are the following:

(1) "He<sup>69</sup> answered it was well, and referring me to Moro Punditt, his Peshua, or Chancellor to examine the Articles and gave him an account what they were, hee and his son he took leaves and retired into their private apartments, where they were busily employed with the Banyans."<sup>70</sup> in consultations and other ceremonies, and will hear of no manner of business until the coronation be over."<sup>71</sup> Before interpreting this passage as a proof of Shivaji's illiteracy, we have to remember that this very document contains good many references to the necessity of getting Shivaji's signature on the Articles of treaty, which references we have already quoted and drawn attention to. Had Shivaji been illiterate, the ministers' signatures and their seals and at the most, the State seal, would have been quite sufficient for the purpose and it would not have been necessary for Niraji Pandit to have the Articles of the treaty about his person in order to get Shivaji's signature. In this very document it has been definitely stated that Shivaji signed and ratified the Articles and that his ministers also signed. In view of this, Shivaji's referring the Articles to his Peshwa can be satisfactorily explained. Firstly, the Peshwa being the Chief Minister, it was necessary that such an important document as the Articles of proposed treaty must be referred to him for examination and opinion. Secondly, Shivaji had no time to go through them on account of his coronation ceremonies. This has been definitely mentioned in the extract given above and mentioned once again in the narrative. Any other person would have done the same in such circumstances. Moreover, no king read or reads everything himself. He generally entrusts all such letters to his ministers. Shivaji did not do anything unusual. Lastly, we have to remember that Englishmen have so often insisted upon handing over letters into Shivaji's own hands for fear of the ministers misinterpreting their letters if they fell into their hands. This is a very important point indeed in this connection.

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<sup>68</sup> *Shivaji and His Times*, 2nd Edition, pp. 25-26.

<sup>69</sup> *Shivaji*.

<sup>70</sup> *Brahmans* (?).

<sup>71</sup> *Original Correspondence*, Vol. 35, No. 3965, Oxiden's Narrative, 13th May to 13th June 1674.

So it is clear that the handing over the Articles to the Peshwa does not prove Shivaji's illiteracy. The above facts are repeated by Oxinden in his letter to Bombay, dated Rairy, 27 May 1674. (*F. R. Surat*, Vol. 88, Fols. 141-43.) So this does not require any separate examination on account of the identity of facts and circumstances.

The only other passage which can raise more definite doubt is to be found in the account submitted by the Rajapore factors to Bombay after they had met Shivaji in March 1675. It runs thus:

“At length wee presented him our paper of desires, which after had been read to him, with a little pause, seriously looking on us, said that it was all granted us” (*F. R. Surat*, Vol. 88, pp. 41-49, dated the 20th April 1675). It might at first appear that this passage at least does raise some definite doubts about Shivaji's literacy. Therefore, it has to be remembered first that in the face of so many references showing that a paper was read out to Shivaji, can have no force and can be no proof of his illiteracy. Kings do not always and did not read all the papers themselves. Many of us very often ask our young relatives, sons or daughters or our clerks (if there be any) to read out letters, other papers and books to us. Much depends upon the circumstances and our attitude of mind at the time. It will not be correct to conclude from this passage that Shivaji was not able to read the terms of the treaty. The general impression one gets from the passages referred to above is that the contemporary Englishmen regarded Shivaji as literate.

## THE INDIAN FINANCIAL YEAR

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A FINANCIAL year has been defined as a "twelve-month period, which may or may not coincide with the Calendar year, determined upon by business-men or government as the annual period at the end of which books are closed and financial conditions ascertained." In spite of many suggestions to make the accounting period longer than a year, the financial year still remains a twelve-month period, although the dates on which the fiscal year opens are different in different countries. These dates have generally been so fixed as to suit the particular needs of each country, the chief consideration being to secure the accuracy of budget estimates. The accuracy of budget estimates depends to a considerable extent on the date on which the financial year commences, and this date can be fixed only after taking into account the economic conditions of the country as well as the existing administrative and legislative practices. Many countries have at different times changed the dates of the commencement of their respective fiscal years. Upto 1854, the English financial year used to be the same as the Calendar year, when the present April-to-March year was adopted. In the U.S.A. also the fiscal year used to coincide with the Calendar year, but was later changed to commence on July 1. In Belgium and France the financial year opens on January<sup>1</sup>, although in the latter country an abortive attempt was made to change the date of the commencement of the financial year to April 1, in order to secure accuracy of estimates. But the old financial year had to be restored, due principally to a political crisis.

In India the fiscal year of the government opens on April 1. The financial year of the indigenous businessmen is however different. It begins in Diwali, which falls in October or November. The date for the fiscal year was chosen chiefly because it was in uniformity with the English administrative practice. There are reasons to believe that no attempt was then made to determine the date of the commencement of the fiscal year scientifically,<sup>1</sup> and the date once fixed has been allowed to remain. But the need for altering the financial year has been pointed out on various occasions. The question was considered by the Select Committee of 1873, by the Royal Commission on Indian Expenditure, 1895 (President : Lord Welby) and by the Royal Commission on Indian Finance and Currency, 1914 (President : Chamberlain).

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<sup>1</sup> Chamberlain Commission, Minutes of Evidence, Q. 4427.

The last named Commission had recommended the government to consider the question fully and to change the date to November 1 or to January 1, if found feasible. Opinions of the provincial governments and of Chambers of Commerce were invited on this question, in 1921. The provincial governments were found to be of opinion that the disadvantages involved in making the change would outweigh the advantages accruing from it, and therefore they favoured the continuation of the existing financial year. The Chambers of Commerce were divided in their opinion. Considering the response they received, the Government of India deemed it wise to drop the question. The chief reason for this decision of the Government of India as well as for the replies received from the provincial governments seems to be that the administrative difficulties involved in making the change, such as recasting of accounts and the preparation of an extra interim budget, were given undue importance. Dr. Gyan Chand is of opinion that there were no insuperable difficulties in making the change.<sup>2</sup>

Since 1921, the question has never been opened again. The arguments then used in favour of or against effecting a change in the financial year need a fresh examination in the light of the various political changes that have occurred since. Outstanding among these, the following may be recounted as affecting this question :—

(1) The complete provincialization of land-revenue, following the Montague-Chelmsford Reforms.

(2) The separation of the Railway Budget from the general budget of the Government of India in 1924.

(3) The Government of India Act of 1935 and the subsequent inauguration of Provincial Autonomy.

(4) The assignments and subventions made to the provinces according to the Niemeyer Report ; and

(5) The proposed federation.

The reasons put forward against a change by the witnesses before the Chamberlain Commission have been summed up<sup>3</sup> as follows. In each case, the reason given does not explain why the present date was fixed, but only seeks to justify its continuance :

(1) That it is desirable that Provincial governments and the Government of India should close their accounts early enough to enable the Secretary of State for India to fulfil his statutory obligation of laying before both

<sup>2</sup> Gyan Chand, *Financial System of India* (1926), p. 37.

<sup>3</sup> The first three by Dr. Gyan Chand, *op. cit.*, p. 35.

the Houses of Parliament the accounts of the Government of India and the Provincial Governments in the month of May.

Against this it was even then pointed out by Mr. Lionel Abrahams that "the so-called Indian Budget Debate tends more and more to be a debate about Indian questions generally, in which the financial part is not of preponderating importance".<sup>4</sup>

It would not therefore matter much whether the figures sent over to England are fresh or six months old ; for the members of Parliament are not interested in the details of Indian Finance.<sup>5</sup>

(2) Another reason advanced for justifying the present date was "the desirability of the Viceroy's touring in the month of April before taking the summer residence in Simla and the convenience of preparing the estimates before the end of March, when generally the English Officers go to England on leave". But this reason does not appear to have any substance in it, for if the date of the financial year were to be fixed say between October 1 and January 1, it would not in the least hinder the April tour of the Viceroy or the summer furloughs of English Officials.

(3) The most patent difficulty is the trouble to the administration in the preparation of an extra intermediate budget, and other difficulties in account-keeping. But if a change is going to be permanently beneficial, such incidental difficulties will be far outweighed, in the long run, by the advantages secured from the change.

(4) Another difficulty that was pointed out was that the estimating officers (the heads of various departments) are required to tour in the months of November and December. But supposing that the financial year began on December 1 or January 1, the estimating officers would prepare their estimates sometime in September or October and therefore would be free to undertake their customary winter tours. It appears that this difficulty with regard to the touring of officers has decreased in importance after the reforms of 1920.<sup>6</sup>

A change in the present financial year has been advocated to secure a greater degree of accuracy in the budget estimates. The accuracy of the budget estimates depends upon a correct appraisal of the economic conditions of the (financial) year to which they relate. This requires considerable foresight and intelligence, but much depends upon the vagaries of the season

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<sup>4</sup> Q. 11522, *Evidence, Chamberlain Commission*.

<sup>5</sup> No mention of this statutory obligation of the Secretary of State for India has been made in the Government of India Act of 1935.

<sup>6</sup> *Vide* para 52, p. 47, *Indian Statutory Commission*, Vol. IX, Memorandum submitted by the Government of the U. P.



and other factors which are apt to elude human forethought. In India the economic conditions of the year turn largely on the course of the South-West Monsoon (June to September). Hence it is a very difficult task to prepare accurate estimates. This difficulty must have been fully realized by Sir Guy Fleetwood Wilson (Finance Member, 1909-13), when he described the Indian Budget as "largely a gamble in rains". The situation is further aggravated by the fact that under the present fiscal year, the budget has got to be introduced into the Legislature sometime in the beginning of March so as to complete the voting of the demands as well as the passing of the Finance Bill before the commencement of the next financial year. This entails the preparation of the budget estimates some six to eighteen months in advance of their actual execution.<sup>7</sup> Thus the Finance Member has to prepare his estimates in ignorance of the most important factor on which the results of the year will depend.<sup>8</sup> The shorter the interval between the time of preparation of the estimates and the actual execution of the budget, the greater the likelihood of the estimates being accurately formed (or rather actually realized); on the other hand the longer this gap, the greater the likelihood of the estimates being wide of the mark. This is due to two causes, viz. :—

(i) The more distant the future, the more dimly can it be foreseen and this is specially true in India where so much depends on the monsoons.

(ii) Whenever there is a feeling of uncertainty, the estimating officers tend to err on the safe side by underestimating revenue and overestimating expenditure to avoid being left short of cash during the year.<sup>9</sup>

The selection of the date on which the financial year should begin depends on a number of considerations, the more important of these are the following. The financial year should begin on such a date :

(i) That it should enable the estimates to be drawn at a time when the results of the financial transactions of the previous year can be well ascertained.<sup>10</sup>

<sup>7</sup> P. K. Wattal, *The System of Financial Administration in British India* (1923), p. 23.

<sup>8</sup> It may be argued that since the provincialization of the land revenue, the bulk of the Central revenues are obtained from items like customs, income-tax, salt, etc. But the revenue from these turns largely on the agricultural prosperity of India which depends on the monsoons. If the central revenues are not directly dependent on the monsoons, they cannot be said to be altogether independent of them either. Thus in general the above argument remains intact. See Qs. 4423-6, *Evidence, Chamberlain Commission*.

<sup>9</sup> P. K. Wattal, *op. cit.*, pp. 25-6.

<sup>10</sup> The term "budget" is defined as "an estimated balance-sheet of revenues and expenditure of the financial year" by Young. But it is better to adopt the more comprehensive definition of the term given by Willoughby (*The National Budget System*, p. 67), viz., "it is or it should be at once a report, an estimate and a proposal". The advantages resulting from a change in the financial year (e.g., more accurate budgeting) will be seen more clearly if we keep in mind Willoughby's definition of the budget.

(ii) that it should enable the estimates to be framed at a time when the important events of the economic life of the country are visible, and their effects on the economic life of the country capable of being ascertained and provided for in the estimates. That is to say, in India, the financial year should begin as soon after the results of the monsoon are accurately ascertainable as possible.

(iii) that there should be as little administrative and legislative inconvenience as possible. The existing administrative and legislative practices should be given due consideration in effecting the change.

Almost all the witnesses examined by the Chamberlain Commission favoured and some even advocated the change of the financial year. But opinions were divided as to the exact date on which the changed fiscal year should begin. Although five dates, viz., September 1, October 1, November 1, December 1 and January 1, can be said to have been suggested, the last two dates were the most favoured. Sir Guy Fleetwood Wilson advocated the adoption of the Calendar year.<sup>11</sup> Sir James (later Lord) Meston also favoured a Calendar year or alternatively an year beginning on December 1. But he was against an year beginning on October 1.<sup>12</sup> It was pointed out that if the financial year began on October 1, the trade conditions would be left to guess-work and the Government would have to budget for normal trade conditions; for even if the results of the monsoon were fully known, trade conditions depend not only on the produce but also on foreign demand, which would be unknown.<sup>13</sup> The foreign trade, specially exports, of India is brisker during the first half of the Calendar year and a greater part of the annual foreign trade transactions are effected during this period. In view of this it would be advantageous to commence our fiscal year on December 1 or January 1, for in this case it would be possible to estimate foreign demand more accurately than it is possible to do at present. Thus beginning our financial year on December 1 or January 1 will make far more accurate budgeting than at present, for we will be in a position to estimate more accurately not only the quantity of the produce but also the foreign demand for it. Thus the case for beginning the financial year on January 1 seems to be very strong and a perusal of the evidence given before the Chamberlain Commission also lends support to this view.<sup>14</sup>

<sup>11</sup> *Evidence*, Q. 11465.

<sup>12</sup> Qs. 9383, 9050, and 9167.

<sup>13</sup> Q. 4538, *Evidence*.

<sup>14</sup> Meston pointed out that "if the financial year ran from January 1, at any rate, nine months in each financial year would be more or less secured on the monsoon which had by that time passed behind you. It would give one much security."—*Evidence*, Q. 3979.

In view of the political changes which have occurred since 1920, it may be argued that there is less need to change the financial year now than there was twenty years ago. But inasmuch as the question turns on the fundamental economic conditions of this country, which remain unchanged, this cannot be so. And again, what really matters is, not whether there is less reason to change the financial year now than there was some years ago, but, whether a change now will be an improvement over the existing situation. If such a change is found to be advantageous to the budgetary system of the country, it ought to be given effect to.

So far as the provinces are concerned, land revenue still forms a major item of revenue in their budgets and their expenditures too are more flexible than that of the Centre in normal times. Therefore the arguments for a change in the fiscal year hold good with greater reason in case of the provinces. Under the existing financial relations between the provinces and the Central Government, a lag of a month between the financial years of the two (*i.e.*, the provinces and the Central Government) may perhaps be found desirable ; the financial year of the provinces beginning one month after that of the Centre. This lag will enable the provinces to take account of the Central assignments in their respective budgets. Thus the Central financial year may begin on December 1, while the provinces may adopt the Calendar year as their fiscal year with advantage.

Here we have assumed that all the provinces follow a uniform financial year. But it may be that to some provinces, whose yield of land-revenue depends mainly on the winter monsoon, some other financial year may be more convenient. Even if this be true, the majority of the provinces will have a uniform financial year. The only obvious disadvantage arising from the diversity of the financial year as between the provinces is that to the students of finance, specially in connection with the comparison of the figures of different provinces. Such diversity regarding the financial year does exist in the States of the U.S.A. *inter se* and though little can be said against this theoretically, uniformity seems to be more desirable.

The general feeling in favour of a change in the present financial year of British India has long been present, but somehow the change has never been effected. If the effects of the change are seen to be beneficial and lasting, transitory difficulties involved in effecting the change must not be given undue importance.

# A STUDY OF THE PERIODIC FLUCTUATIONS IN THE CAROTENE CONTENT OF COW AND BUFFALO BUTTERFAT

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THE importance of vitamin A in the dietary of human beings is now well established and its deficiency in the diet is known to be associated with impaired growth, lowered resistance to infections, especially of the eye and lung (Plimmer and Plimmer, 1936). It is also known that green plants contain carotene, the precursor of Vitamin A, and that pure carotene produces growth in rats comparable with that given by vitamin A (Moore, 1929). From the carotene contained in the various fodders and feeding stuffs the animals synthesise vitamin A which is found in various animal fats like butter, cod-liver oil, egg fat and kidney fat. The carotene content of forage plants has been found to fluctuate according to the stage of growth of the plants, and that of the milk and butterfat according to the carotene content of the food consumed (Virtanen, 1938). In view of the fact that to a vast majority of the population of the Province, whose diet is primarily of a vegetarian character, green vegetables, milk and butterfat constitute the chief sources of vitamin A or its precursor the carotene, a study of the fluctuations in the carotene content of butter was undertaken with a view to determining its seasonal value as a protective food factor, and the results obtained are recorded in this paper.\*

## *Experimental*

Butterfat contains both vitamin A and carotene and in order therefore to determine its full value as a protective food factor both these constituents

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\* While this work was in progress, results of experiments relating to the influence of certain fodders and feeding stuffs upon the carotene and vitamin A content of butterfat have been recorded by Das Gupta (1939), and Doctor *et al* (1940).

The problem was suggested and developed, and various details were worked out by the senior author (D.V.B.), and the junior author (R.C.S.) helped in the analytical work.

are required to be determined. As it was not possible to carry out the determinations of vitamin A owing to certain difficulties encountered in procuring the required reagents and certain apparatus, determinations of only carotene were carried out in the first instance. It may be mentioned here that the natural yellowness of butter corresponds roughly but not consistently with its vitamin A potency.

Samples of butterfat were prepared and examined twice a week from the morning and evening milk of two individual cows and two buffaloes and from the composite sample of milk of the dairy herd of buffaloes. Carotene content of the diet supplied to the various animals under experiment was also determined. The description of the individual animals and their rations is given below:—

TABLE I  
*Description of the animals and their rations*

Sl. No.		Names of animals	Breed	Date of birth of the animal	Number of lactation during the experimental period	Last date of calving	Concentrates fed to the animals
1	Cow	Manorama	½ Montgometry ¼ Ayrshire ¼ Hissar	12-9-24	8th	20-9-39	Linseed cake, wheat bran, cottonseed and lakh ( <i>Lathyrus sativus</i> ) in equal proportions. Total quantity of the mixture in lbs. given per day to each animal being equal to 50% of the milk yield.
2	Cow	Anusuya	„	15-5-26	8th	16-9-39	
3	Buffalo	Rangoo	¾ Delhi ¼ Surati	18-7-27	6th	8-7-39	As above except that the quantity given to each animal was equal to 60% of the milk yield.
4	Buffalo	Ravi	Delhi	2-10-29	5th	9-7-39	

Carotene in the various feeding stuffs was determined according to the method of Russell (1935). For this purpose the green or dry material was extracted with acetone (redistilled colour-free) and petroleum ether respectively in a "Soxhlet" apparatus till free from all colouring matter. The acetone extract was washed several times with small quantities of petroleum ether and water till the acetone-water fraction was colourless. The petroleum extract either from the green or dry material was washed repeatedly

with 85% methyl alcohol and thereafter 2-3 times with 25% KOH in methyl alcohol. After suitable dilution the yellow colour of the purified petroleum extract of carotene was matched in a Lovibond tintometer.

Determinations of carotene in butterfat were carried out according to the method of Fergusson and Bishop (1936). For this purpose butter was melted at a temperature of 45-50° C in an oven and the fat was carefully separated and filtered through a filter paper. Weighed quantities of the fat were then taken in stoppered measuring cylinders and dissolved in petroleum ether and made up to a known volume. The yellow colour of the petroleum solution was then matched in a Lovibond tintometer.

Quantities of carotene present in the petroleum extracts from either the butterfat or the feeding stuffs were calculated from a curve prepared by plotting thereon the tintometric readings (with  $\frac{1}{2}$ " cell) of solutions containing known quantities of pure carotene per 100 c.c. Since 0.6 micrograms B-Carotene has a vitamin A potency of one international unit, a rough conversion of carotenoid content into international units of vitamin A potency can be made by multiplying the content of carotene expressed in micrograms by 1.6 (Fixsen and Roscoe, 1937-38).

Carotene contents of the various concentrates fed to the cattle throughout the experimental period are given below:—

TABLE II  
*Carotene content of the concentrates*

Concentrates	Micrograms of carotene per 100 grams dry matter
Wheat bran .. ..	230
Lakh ( <i>Lathyrus sativus</i> ) .. ..	329
Cottonseed .. ..	196
Linseed cake .. ..	196

Results of carotene estimations of the cow and buffalo butterfat expressed as fortnightly averages, and the carotene content of the roughages fed to the cattle during the course of the experiment are given below:—

TABLE III

*Carotene content of butterfat and roughages*

Period of examination of the samples	Micrograms of carotene per 100 grams of dry matter					Roughages
	Individual cow butter		Individual buffalo butter		Composite sample of butter from the dairy herd of buffaloes	
	Manorama	Anusuya	Rangoo	Ravi		
10-10-39 to 28-10-39	359	340	29	28	37	Green grass :— 13570
29-10-39 to 10-11-39	279	308	19	22	22	Green kadbi (Sorghum fodder) :— 1025
11-11-39 to 24-11-39	215	213	19	21	25	”
25-11-39 to 7-12-39	171	193	18	18	18	”
Average for the period 28-10-39 to 7-12-39	222	238	19	20	22	
8-12-39 to 22-12-39	318	304	22	25	27	Green clover :— 24460 Dry kadbi (Sorghum fodder) :— 949 Dry grass :— 2770
23-12-39 to 5-1-40	481	527	22	29	29	”
6-1-40 to 19-1-40	576	626	28	30	26	”
20-1-40 to 2-2-40	642	673	29	25	31	”
3-2-40 to 16-2-40	646	702	24	25	27	”
17-2-40 to 1-3-40	616	602	36	26	24	”
Average for the period 8-12-39 to 1-3-40	546	572	27	27	27	

TABLE III—(Contd.)

Period of examination of the samples	Micrograms of carotene per 100 grams of dry matter					Roughages
	Individual cow butter		Individual buffalo butter		Composite sample of butter from the dairy herd of buffaloes	
	Manorama	Anusuya	Rangoo	Ravi		
2-3-40 to 12-3-40	568	578	*	31	26	Juar (Sorghum) silage:—516 and dry grass as above
13-3-40 to 26-3-40	405	419	*	25	27	"
27-3-40 to 9-4-40	372	474	*	25	28	"
10-4-40 to 23-4-40	364	366	*	26	29	"
24-4-40 to 7-5-40	259	309	*	*	22	"
8-5-40 to 21-5-40	145	144	*	*	25	"
22-5-40 to 7-6-40	112	112	×	×	22	"
8-6-40 to 21-6-40	81	×	×	×	19	"
Average for the period 2-3-40 to 21-6-40	288	343		27	25	

As both the buffaloes and one of the cows had now become dry, new animals were brought under experiment with effect from the 22nd June 1940. The description of the new animals is as follows:—

TABLE IV  
Description of the animals

Names of animals		Breed	Date of birth of the animal	Number of lactation during the experimental period	Last date of calving
Cows	Kusumavati	1/2 Montgomery 1/2 Ayrshire 1/2 Hissar	23-11-27	8th	14-4-40
	Meghmala	1/2 Hissar 1/2 Ayrshire 1/2 Sindhi	7-3-34	3rd	13-4-40
Buffaloes	Sumitra	Delhi	13-7-28	9th	31-5-40
	Kali	1/2 Delhi 1/2 Surati	13-8-26	7th	11-5-40



Results of carotene estimations of the butterfat and of the roughages fed to the animals with effect from the 22nd June 1940 are given below:—

TABLE V  
*Carotene content of butterfat and roughages*

Period of examination of the samples	Micrograms of carotene per 100 grams of dry matter						Composite sample of butter from the dairy herd of buffaloes	Roughages
	Individual cow butter			Individual buffalo butter				
	Manorama	Kusumavati	Meghmala	Sumitra	Kali			
22-6-40 to 5-7-40	84	98	92	22	20	20	<i>Juar</i> (Sorghum) silage:—516, dry grass:—2770  As above and such green material as is available to the cattle during the short period they are out of stalls	
6-7-40 to 19-7-40	132	109	116	19	22	25		
20-7-40 to 2-8-40	143	92	81	17	19	23		
3-8-40 to 16-8-40	143	127	116	23	23	24		
Average for the period 22-6-40 to 16-8-40	125	106	101	20	21	23	<i>Juar</i> (Sorghum) silage and dry grass as above and green grass:—11960       Green grass only:—11960	
17-8-40 to 30-8-40	284	201	197	24	18	27		
31-8-40 to 13-9-40	277	256	201	24	23	28		
14-9-40 to 27-9-40	350	379	227	31	32	34		
28-9-40 to 11-10-40	285	346	177	23	27	32		
12-10-40 to 25-10-40	270	335	320	28	23	29		
26-10-40 to 8-11-40	290	303	268	27	30	28		
9-11-40 to 22-11-40	269	333	229	21	22	25		
Average for the period 17-8-40 to 22-11-40	289	307	231	25	25	29		

### Discussion of the Results

*Comparative value of cow and buffalo butter.*—It is seen that cow butter is considerably richer in carotene content than buffalo butter and in this respect these results corroborate those recorded by Doctor, Banerjee and Kothavalla (1940).

*Fluctuations in the carotene content.*—Carotene content of cow butter is very considerably affected by changes in the feed but that of the buffalo butter which has been found to vary between 20 and 30 micrograms per 100 grams, is not appreciably affected.

In the case of cow butter the carotene content was found to be about 300 to 350 micrograms per 100 grams when the animals were fed on green grass during the period August to October. When green *Kadbi* was substituted in place of green grass, *e.g.*, during the period mid October to the beginning of December, there was a reduction in the carotene content, *i.e.*, 200 to 230 micrograms per 100 grams, which subsequently rose to its maximum of 500 to 570 micrograms when green clover was fed during the period December to March. When green clover was substituted by *Juar* silage and dry grass, the carotene content came down to about 300 micrograms per 100 grams during the period March to June. Das Gupta (1939), and Doctor, *et al* (1940) have also observed an increase in the carotene content of butterfat when green grass was fed to the milch animals. In view of the positive correlation between the carotene and vitamin A content of butter (Baumann and Steenbock, quoted by Banerjee, 1936) the general effect of the various roughages on the value of butter and milk as protective food factors was found to be as follows :—Green clover > green grass > green *kadbi*. The effect of carotene-rich green fodders appears to persist for a long period after they are withdrawn from the diet of the animals.

*Carotene content of the various feeds.*—Out of the various concentrates fed to the cattle, cottonseed and linseed cake were found to be alike while the legume *lakh* (*Lathyrus sativus*) gave the highest carotene value.

Carotene content of the various roughages employed was found to be of the following order :—

Green clover > green grass > dry grass > green *kadbi* > dry *kadbi* > *juar* silage.

### Summary

(1) It is seen that cow butter is considerably richer in carotene content than buffalo butter.

(2) Carotene content of cow butter is very considerably affected by changes in the feed but that of the buffalo butter which has been found to vary between 20 and 30 micrograms per 100 grams, is not appreciably affected.

(3) In the case of cow butter the carotene content has been found to fluctuate between 200 and 570 micrograms per 100 grams depending upon the carotene content of the roughage employed.

(4) The general effect of the various roughages on the value of butter and milk as protective food factors was found to be as follows:—Green clover > green grass > green *kadbi*.

(5) Carotene content of the various roughages employed was found to be of the following order:—

Green clover > green grass > dry grass > green *kadbi* > dry *kadbi* > green silage.

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# ON THE MOMENTS, AND THE DISTRIBUTION OF A SAMPLE MEAN FOR A BESSEL FUNCTION POPULATION

BY M. P. SHRIVASTAVA, M.Sc.

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S. S. BOSE (1938) made a critical study of the moments of the following Bessel Function population :—

$$f(x) dx = C \cdot e^{-ax} \cdot x^{2m} I_m(q\sqrt{x}) dx \quad (1)$$

where 
$$C = \left(\frac{2}{q}\right)^m \cdot a^{m+1} \cdot e^{-\frac{q^2}{4a}}$$

and  $q > 0, a > 0, m > -1 : (0 \leq x < \infty).$

This distribution first arose in a specialised form, in connection with the distribution of the  $D^2$ -statistic (R. C. Bose, 1936). The same author (R. C. Bose, 1938) then showed that the distribution of the mean of a random sample of size  $n$  from this Bessel Function population has a similar distribution. He obtained the stated result by applying the transformation

$u_r = \sum_{\mu=1}^r x_\mu$ , (where  $r = 1, 2, 3 \dots n$ ) to the joint distribution of  $n$  observations, and then integrating the resulting expression step by step, with the help of Sonine's second finite integral

$$\begin{aligned} \int_0^\pi J_\mu(z \sin \theta) \cdot J_\nu(Z \cos \theta) \cdot \sin^{\mu+1} \theta \cos^{\nu+1} \theta d\theta \\ = \frac{z^\mu Z^\nu J_{\mu+\nu+1}(\sqrt{z^2 + Z^2})}{(z^2 + Z^2)^{\frac{1}{2}}(\mu + \nu + 1)}, \end{aligned}$$

$$R(\mu) > -1 \text{ and } R(\nu) > -1.$$

Here, I have shown that the same result is very easily obtained by the method of characteristic functions.

2. By the characteristic function of the distribution law of the variable  $x$  is meant the mean value of  $e^{itx}$ . Thus, for a continuous distribution law, if  $f(x) dx$  is the probability to within infinitesimals of a higher order that

$$x - \frac{1}{2} dx < x < x + \frac{1}{2} dx,$$

then  $\phi(t)$ , the characteristic function of the distribution law of  $x$ , is given by (S. Kullback, 1934),

$$\phi(t) = \int e^{itx} \cdot f(x) dx, \quad (2)$$

where the limits of the integral depend upon the range of  $x$  applicable to  $f(x)$ , and  $t$  is any real variable.

Knowing  $\phi(t)$ , the characteristic function, the distribution law,  $f(x)$ , is easily obtained by means of the Fourier Transform, so that

$$f(x) = \frac{1}{2\pi} \int_{-\infty}^{\infty} e^{-itx} \phi(t) dt. \quad (3)$$

Further, if  $u \equiv u(x_1, x_2, \dots, x_n)$  be any *statistic* calculated from observations, then the characteristic function of the distribution law of  $u$  is given by

$$\phi(t) = \int \int \dots \int e^{itu} \prod_{\mu=1}^n \left\{ f(x_{\mu}) dx_{\mu} \right\} \quad (4)$$

the limits of integration being those applicable to  $f(x)$ .

and its distribution law,  $F(u) du$  is given by

$$F(u) = \frac{1}{2\pi} \int_{-\infty}^{\infty} e^{-itu} \phi(t) dt. \quad (5)$$

3. The characteristic function of the distribution law given by (1) is, therefore, given by

$$\phi(t) = C \int_0^{\infty} e^{-(\alpha - it)x} \cdot x^{m/2} \cdot I_m(q\sqrt{x}) dx. \quad (6)$$

Putting  $x = y^2$ , (6) becomes

$$2C \int_0^{\infty} e^{-(\alpha - it)y^2} \cdot y^{m+1} \cdot I_m(qy) dy. \quad (7)$$

But, we know that (Watson, G. N., p. 394)

$$\int_0^{\infty} r^{n+1} \cdot e^{-p^2 r^2} \cdot J_n(\lambda r) dr = \frac{\lambda^n}{(2p^2)^{n+1}} \cdot e^{-\frac{\lambda^2}{4p^2}}.$$

Putting  $\lambda = iq$ , we have

$$\int_0^{\infty} r^{n+1} \cdot e^{-p^2 r^2} \cdot J_n(iqr) dr = \frac{(iq)^n}{(2p^2)^{n+1}} \cdot e^{-\frac{q^2}{4p^2}},$$

or

$$\int_0^{\infty} r^{n+1} e^{-p^2 r^2} \cdot I_n(qr) dr = \frac{q^n}{(2p^2)^{n+1}} \cdot e^{\frac{q^2}{4p^2}}. \quad (8)$$

Hence, we have

$$\begin{aligned} \phi(t) &= 2C \cdot \frac{q^m}{\{2(a-it)\}^{m+1}} \cdot e^{\frac{q^2}{4(a-it)}}, \\ &= \left(\frac{a}{a-it}\right)^{m+1} \cdot \exp\left\{-\frac{q^2}{4a} + \frac{q^2}{4(a-it)}\right\}. \end{aligned} \quad (9)$$

Let now,  $x_1, x_2, \dots, x_n$  be  $n$  independent observations, constituting a random sample drawn from the population given by (1), and let

$$u = x_1 + x_2 + \dots + x_n. \quad (10)$$

Then, since the characteristic function of the sum of  $n$  independent variables is equal to the product of their individual characteristic functions, the characteristic function of the distribution law of  $u$  is given by

$$\left(\frac{a}{a-it}\right)^{(m+1)n} \cdot \exp\left\{-\frac{nq^2}{4a} + \frac{nq^2}{4(a-it)}\right\}. \quad (11)$$

Applying Fourier Transform to (11), the distribution law of  $u$  is given by  $F(u) du$  where

$$\begin{aligned} F(u) &= \frac{e^{-\frac{nq^2}{4a}}}{2\pi} \int_{-\infty}^{\infty} \left(\frac{a}{a-it}\right)^{(m+1)n} \cdot e^{-itu + \frac{nq^2}{4(a-it)}} \cdot dt \\ &= \frac{a^{(m+1)n}}{\exp\left(a u + \frac{nq^2}{4a}\right)} \frac{1}{2\pi} \int_{-\infty}^{\infty} (a-it)^{-(m+1)n} \exp\left\{(a-it)u + \frac{nq^2}{4(a-it)}\right\} dt. \end{aligned} \quad (12)$$

Putting  $u(a-it) = T$ , equation (12) becomes

$$F(u) = \frac{a^{(m+1)n}}{\exp\left(a u + \frac{nq^2}{4a}\right)} u^{mn+n-1} \cdot \frac{1}{2\pi i} \int_{u a - i\infty}^{u a + i\infty} T^{-mn-n} e^{T + \frac{n u q^2}{4T}} dT. \quad (13)$$

Since the integrand in (13) is regular throughout the  $T$  plane except at the points 0 and  $\infty$ , 0 being a simple pole, we can (Whittaker and Watson, §5.32, cor. 1) change the path of integration from that given above to the one starting from  $-i\infty$ , encircling the origin once in the positive direction, and returning again to  $-i\infty$ . Thus, we can write (13) in the

form

$$F(u) = \frac{a^{(m+1)n}}{\exp\left(a u + \frac{n q^2}{4a}\right)} u^{mn+n-1} \cdot \frac{1}{2\pi i} \int_{-i\infty}^{(0+)} T^{-mn-n} e^{T + \frac{n u q^2}{4T}} dT. \quad (14)$$

But it is known that

$$I_n(z) = \frac{\left(\frac{1}{2}z\right)^n}{2\pi i} \int_{-i\infty}^{(0+)} t^{-n-1} \cdot e^{t + \frac{z^2}{4t}} dt.$$

Making use of this, we have for the distribution law of  $u$  the expression

$$F(u) = C'' \cdot e^{-au} \cdot u^{\frac{1}{2}(mn+n-1)} I_{mn+n-1}(q\sqrt{n}u) du \quad (15)$$

where

$$C'' = \left(\frac{2}{q\sqrt{n}}\right)^{mn+n-1} \cdot a^{mn+n} \cdot e^{-nq^2/(4a)}. \quad (16)$$

Finally, putting  $u = n\bar{x}$  in (15) we have for the distribution law of the sample mean  $\bar{x}$ , the expression

$$C' \cdot e^{-nax} \cdot \bar{x}^{\frac{1}{2}(mn+n-1)} \cdot I_{mn+n-1}(nq\sqrt{\bar{x}}) dx \quad (17)$$

where

$$C' = \left(\frac{2}{nq}\right)^{mn+n-1} \cdot (na)^{mn+n} \cdot e^{-nq^2/(4a)}. \quad (18)$$

4. The moments of the distribution (1) have been obtained by S. S. Bose (paper already referred to) by a lengthy process. However, by resorting to the method of characteristic functions we arrive at the required results very easily.

The logarithm of the characteristic function is called the cumulative function and is denoted by  $K(t)$ ; i.e.,

$$K(t) = \log \phi(t). \quad (19)$$

The coefficient of  $t^r/r!$  in the expansion of  $K(t)$  in ascending powers of  $t$  is called by R. A. Fisher the  $r$ th cumulant of the distribution and is denoted by  $\kappa_r$ .  $\kappa_1$  is simply the arithmetic mean, and the relation between  $\kappa_2$ ,  $\kappa_3$ ,  $\kappa_4$ , . . . and the moments (about the mean)  $\mu_2$ ,  $\mu_3$ ,  $\mu_4$ , . . . is given by (Fisher, 1938)

$$\left. \begin{aligned} \mu_2 &= \kappa_2, \\ \mu_3 &= \kappa_3, \\ \mu_4 &= \kappa_4 + 3\kappa_2^2, \\ &\dots \end{aligned} \right\} \quad (20)$$

In the case under consideration we have, taking logarithm of  $\phi(t)$  given by (9),

$$\begin{aligned} K(t) &= \log \phi(t), \\ &= -(m+1) \log \left(1 - \frac{it}{a}\right) - \frac{q^2}{4a} + \frac{q^2}{4a} \left(1 - \frac{it}{a}\right)^{-1}, \\ &= (m+1) \sum_{r=0}^{\infty} \frac{1}{r} \left(\frac{it}{a}\right)^r + \frac{q^2}{4a} \sum_{r=1}^{\infty} \left(\frac{it}{a}\right)^r. \end{aligned} \quad (21)$$

Hence

$$\kappa_r = \frac{(r-1)! (m+1)}{a^r} + \frac{r! q^2}{4 a^{r+1}}; \quad (22)$$

so that we have at once

$$\begin{aligned} \text{Mean } (x) &= \kappa_1 = \frac{m+1}{a} + \frac{q^2}{4a^2}, \\ \mu_2(x) &= \kappa_2 = \frac{m+1}{a^2} + \frac{q^2}{2a^3}, \\ \mu_3(x) &= \kappa_3 = \frac{2(m+1)}{a^3} + \frac{3q^2}{2a^4}, \\ \mu_4(x) &= \kappa_4 + 3\kappa_2^2 \\ &= \frac{6(m+1)}{a^4} + \frac{6q^2}{a^5} + \left\{ \frac{m+1}{a^2} + \frac{q^2}{2a^3} \right\}^2, \\ &= \frac{3}{4} \cdot \frac{q^4}{a^6} + \frac{3(m+3)q^2}{a^5} + \frac{3(m+1)(m+3)}{a^4}, \end{aligned} \quad (23)$$

as obtained by Bose.<sup>3</sup>

Again, to find the moments of  $\bar{x}$  we see from (11) that the characteristic function of  $x$  is

$$\left( \frac{n a}{n a - it} \right)^{(m+1)n} \cdot \exp \left\{ -\frac{nq^2}{4a} + \frac{n^2 q^2}{4(n a - it)} \right\}. \quad (24)$$

Expanding the logarithmic function of (24) in ascending powers of  $t$  and collecting the coefficients of  $(it)^r/r!$  we find that

$$\kappa_r(\bar{x}) = \frac{(m+1)(r-1)!}{n^{r-1} a^r} + \frac{q^2 r!}{4 n^{r-1} a^{r+1}}, \quad (25)$$

where  $\kappa_r(x)$  is the  $r$ th cumulant of the distribution of  $\bar{x}$ . From this it is easy to verify that



$$\begin{aligned}
 \mu_1'(\bar{x}) &= \mu_1'(x) & [\mu_1'(x) &\equiv \text{mean}(x)] \\
 \mu_2(\bar{x}) &= \frac{1}{n} \mu_2(x) \\
 \mu_3(\bar{x}) &= \frac{1}{n^2} \mu_3(x) \\
 \mu_4(\bar{x}) &= \frac{3}{n^2} \left[ \frac{1}{4} \frac{q^4}{a^6} + \frac{q^2}{a^5} \left( m+1 + \frac{2}{n} \right) + \frac{m+1}{a^4} \left( m+1 + \frac{2}{n} \right) \right].
 \end{aligned} \tag{26}$$

Equation (25) could be inferred directly from (22) by making use of the additive property of the cumulants, namely, the property that, the  $r$ th cumulant of the mean of  $n$  independent observations from any population is equal to the  $r$ th cumulant of that population divided by  $n^{r-1}$  (Fisher\* and Cornish, 1938).

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## KINSHIP AMONG THE GONDS

BY M. P. BURADKAR, M.A.

THE study of kinship among the Gonds is as essential for understanding the true nature of their social organisation as that of any other people. The order of kinship determines the social relations of individual members in the social groups and regulates their mutual rights and duties. There is always an intimate connection between the type of family, the form of marriage and the system of relationship that obtains within it. Because of the conservative nature of the system of kinship, which does not change as rapidly as the type of family and the form of marriage, it gives us an insight into the social organisation of the tribe as it previously existed.

The appendix at the end gives a tabular statement of the terms of relationship arranged generation and sex-wise, as they obtain among the Gonds at present. These terms of relationship are genealogical and not social or functional. In collecting these terms it was found that an average Gond usually can remember the personal names of his immediate ancestors only up to the third generation only. His knowledge of the clan-names in respect of his relatives, *i.e.*, his affines, is also very meagre. He can, however, readily tell the phratry his relatives belong to; and this is in no way difficult, as the phratric organisation plays a prominent part in determining marriage relations, which are based on the principle of exogamy.

The system of relationship described herein has been recorded mainly from the Raj Gonds, Dhur Gonds, Gaite Gonds and Pardhan Gonds inhabiting the Nagpur plains and the Western Satpura region. But with slight dialectical modifications and variations the classificatory terms and system of relationship are in use among all sections of the Gonds. The system of relationship among the Hill Marias described by Grigson in his *The Maria Gonds of Bastar* is also identical with this in its salient features.

The original system and the nomenclatures in Gondi obtain among those who inhabit the comparatively backward tracts of the Gond country and speak Gondi as their mother-tongue. Those who have abandoned their mother-tongue and speak the language of the Hindus in whose neighbourhood they live, use relationship terms in the language of the locality they live in. Such languages are Marathi in the Nagpur and Berar plains, Hindi in the north of the Central Provinces and Chhattisgarhi in the east of the

Central Provinces. But careful examination of their relationship system also discloses the fact that, but for the disappearance of group relationship terms, there has been no change in the essential structure and details of the system. Those who speak Gondi principally and have adopted the local language of their Hindu neighbour as a subsidiary tongue have borrowed terms which their system originally did not contain; such terms for example are *Kaka*<sup>1</sup> for father's younger brother, *Putnya* for brother's son and some other. The old classificatory system of the Gonds is being slowly transformed into the descriptive system obtaining among the Hindus.

### *The Gond System of Relationship*

The system of relationship that prevails among the Gonds is classificatory. In it the kinsfolk are classified into categories irrespective of their nearness or remoteness in degree to the person who speaks.

A few distinguishing marks of the classificatory system may here be noted. The classificatory system is based on marriage and not on physical ties of common blood or consanguinity. In it the fundamental relation is that between husband and wife, and all other relationships are derived from it. In this system the essential question with a man is, Whom may I marry? and not Who is my father? Thus this system classifies the community "in classes or groups, the common bond between the members of each class or group being not one of blood but simply the similar relation of marriageability or non-marriageability in which they stand to each other and to the members of every other class or group in the community". Each group may, and commonly does, include members who are connected by ties of blood, but this is accidental and not essential.<sup>2</sup>

### *The Classification of Relatives*

To facilitate the description of the system, it is necessary at the outset to classify the relatives into different categories. This is necessary especially because among the Gonds, as among other people with phratries and clans, the system of relationship evolved out of the social factors and institutions behind it.

The relatives among the Gonds are classified under two main categories:—

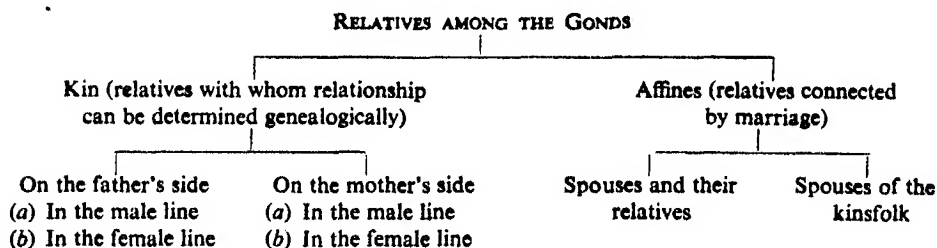
- (i) Kinsfolk and
- (ii) Affines.

<sup>1</sup> This term should not be confused with the Gondi term *KAKO* for maternal grandmother.

<sup>2</sup> Frazer, *Totemism and Exogamy*, Vol. I, p. 290.

The kinsfolk of a man are all his known relatives both on the father's side and mother's side, who belong to two different clans and phratries. The kin relationship is genealogical, while the affines include all those relatives who are connected by marriage. The affines never belong to the person's own clan and phratry, in which he is forbidden to marry, and must always belong to the clan and phratry from which he may have his mate. The affines can be further grouped under two sub-categories, viz., (a) spouses and their relatives, and (b) spouses of the kinsfolk.

The above classification is shown in the table given below:—



### Description of the System

Having pointed out the categories into which the relatives among the Gonds are broadly classified, let us begin with the terms and system of relationship in respect of the kinsfolk.

### The Kinsfolk

Among the Gonds the term *Tannal* or *Dada* is used for the elder brother and the term *Tammur* for the younger. The term *Takka* or *Bai* indicates the elder sister and the term *Selad* the younger. These terms of relationship, indicative of brother and sister, are extended to the children of the father's brothers, real and collateral, and also to those of the mother's sisters, real and collateral. Thus to the sons of his father's brothers and of his mother's sisters, who are older than himself, the term *Tannal* or *Dada* would be applicable and to those who are younger the term *Tammur* would be applicable. Similarly the terms *Takka* and *Selad* are applied to the elder and younger sister respectively, who are the daughters of his father's brothers and mother's sisters. This shows clearly that the classificatory system based on group relationship prevails among the Gonds as among other primitive tribes. The first such group relationship is to be found in the relationship of brothers and sisters as between the sons and daughters of several brothers and several sisters.

It will be seen from the above that in the Gond system of relationship brothers and sisters, real and classificatory, are distinguished from one

another according to age. There is no general term for brother nor is there one for sister. Again the terms indicative of brother and sister do not vary with the sex of the speaker as in some forms of classificatory system, in which "two brothers use a term for one another which is also used between two sisters, but brother and sister employ a wholly different term, which is used reciprocally".<sup>3</sup>

A man uses the terms *Yena* and *Sango* respectively for the son and daughter of his father's sister and mother's brother, real or collateral. That is, the Gond system of relationship places the children of one's father's sisters and of one's mother's brothers in the same category, to the exclusion of the children of one's father's brothers and of one's mother's sisters. Here again no change in terms is made if the speaker is a woman.

A man applies the terms *Sare marri* and *Sare miar* respectively to the son and daughter of his *Yena* (male cross-cousin). The children of his *Sare marri* (nephew) and *Sare miar* (niece) are his *Tang marri* (grandson) or *Tang miar* (grand-daughter). The children of his *Sare marri* call him *Akko* (maternal grandfather) while those of his *Sare miar* call him *Tado* (paternal grandfather). To the children of his *Sango* (female cross-cousin) he applies the terms *Marri* (son) and *Miar* (daughter), and for the children of them both he uses the terms *Tang marri* and *Tang miar*. The children of his *Sango's* son call him *Tado*, while those of her daughter call him *Akko*.

In case of a woman the relationship is reversed. A woman uses the terms *Marri* and *Miar* for the children of her male cross-cousin and *Sare marri* and *Sare miar* for the children of her female cross-cousin. The children of her *Yena's* son use the term *Aji* (paternal grandmother) for her, while those of his daughter uses the term *Kako* (maternal grandmother). The children of her *Sango's* son call her *Kako*, while those of her (*Sango's*) daughter call her *Aji*. But she uses the same terms *Tang marri* and *Tang miar* to denote the children of the sons and daughters of her cross-cousins, both male and female.

A man uses the terms *Marri* (son) and *Miar*<sup>4</sup> (daughter) for his children as well as for the children of his brothers, real and collateral. As will be seen later, these terms are also extended to the children of his wife's sisters, real and collateral.

<sup>3</sup> Rivers, W. H. R., *Social Organisation*, p. 62. (In Torres Straits in the Island of Mabuiag, for example, the people possess the system with this feature.)

<sup>4</sup> Besides the above classificatory terms for children the Gonds have some terms which can be used for one's own children. These are *Pedgal* or *Pedal* for son and *Pedgi* or *Pedi* for daughter. Now-a-days these terms are also in some localities used for the classificatory children. A young child whenever spoken about in relation to its mother is termed as *Chauwa*.

He applies the term *Tang marri* and *Tang miar* to the children of his son and daughter. The children of his son call him *Tado* (paternal grandfather), while those of his daughter call him *Akko* (maternal grandfather). A woman similarly uses the same terms for her children and the children of her sisters, real and collateral. These terms are further extended to the children of her husband's brothers. The children of her son call her *Aji* while those of her daughter call her *Kako*, and for both of them she uses the same terms, that is *Tang marri* and *Tang miar*.

A man uses the terms *Sare marri* and *Sare miar* for his sister's son and daughter respectively and each of them in return call him *Mamal* (maternal uncle). A woman uses these terms for the children of her brother, who in return call her *Ati* (paternal aunt). Thus in the Gond system of relationship the terms *Sare marri* and *Sare miar* are used for the children of a man's sister to the exclusion of the children of his brothers and his own children. In the case of a woman, these terms are used for the children of her brothers to the exclusion of the children of her sisters and of her own children.

A person while addressing his or her elder sister's son and daughter uses the term *Mama* (maternal uncle) and *Kucho* (maternal aunt) respectively. This special relationship in addition to the usual one (i.e., of nephew and niece) as will be shown subsequently results from the institution of grandparent-grandchild marriage.

A man uses the terms *Tang marri* and *Tang miar* for the children of his sister's son and daughter. The children of his sister's son call him *Akko*, while those of his sister's daughter call him *Tado*. In case of a woman the children of her brother's son call her *Kako* while those of his daughter call her *Aji*.

While a man uses the terms *Marri* and *Miar* of his own and his brother's children, he applies quite different terms to the children of his sister. This marked discrimination which a man makes between his own and his brother's children on the one hand and his sister's children on the other, is explained by the Gond system of exogamy. Whereas his own or his brother's children are the offspring of women whom he has married or might have married, the children of his sisters are the offspring of women whom he is forbidden to marry. 'Hence the two sets of children are placed in entirely different categories and distinguished by different names.'

A man applies the term *Dao* to his father and his father's younger brother,<sup>5</sup> using the term *Pepi* for his father's elder brother. In some

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<sup>5</sup> The term *Dao kaka* is also used for the father's younger brother.

localities the term *Baba* is used for the father and the father's brothers, real and collateral, distinguishing them, however, as great (*Phara* or *Sojar*) or little (*Chudur*) according as they are older or younger than his father. The Gonds who have been living in contact with the Hindus use the term *Kaka* for father's younger brother. A man also uses the term *Pepi* or *Phara baba* for the husband of his mother's elder sister and the term *Kaka* or *Chudur baba* for the husband of her younger sister.

But in spite of these common group nomenclatures, the Gonds have a relationship term used solely for the consanguineous father. The term is *Apo* (father), and is used as *Maipo* (my father).

The children of all these men for whom the term 'father' is used are the sons and daughters of them all, and no distinction is made between them. The children of these sons and daughters are their grandsons and grand-daughters.

In the Gond system of relationship, therefore, all the brothers are placed in the relation of father to the children of them all. The present use of two distinct terms—*Pepi* and *Chudur baba*—to denote the father's elder and younger brothers respectively, is of late origin necessitated by the development of the patrilineal system among the Gonds.

A man uses the term *Dai* for his mother and uses the discriminatory terms *Peri* and *Kucho* for his mother's elder and younger sisters, real and collateral, respectively. There is also another term *Yal*, which is used for the mother and her sisters, prefixing the adjectives *Phara* (great) and *Chudur* (little) in case of her elder and younger sisters respectively. These terms are further extended to the wives of the father's elder and younger brothers; the Hinduised advanced Gonds, however, use the term *Kaki* or *Chachi* for the wife of the father's younger brother.

It is significant that the Gonds besides having the classificatory term for the mother have another term which is only used for one's consanguineous mother. The term is *Awal* (mother), and is used as *Maiwal* (my mother).

Each of the sisters uses the terms 'son' and 'daughter' for the children of the other, and no distinction is made between them. As already pointed out, a woman in the case of her elder sister's daughter, in addition to the usual term *Miar*, uses the reciprocal term *Kucho*, using the term *Mamal* in case of her son. The children of all these sister's sons and daughters again are their grand-children.

Among the Gonds, therefore, several sisters real and collateral are virtually placed in the relationship of mother to the children of them all,

notwithstanding the discriminatory terms used for mother's elder and younger sisters, real and collateral.

A man or a woman uses the term *Ati* for his or her father's sister, real as well as collateral. That is, the Gonds restrict the relationship of *Ati* to the sisters of one's father to the exclusion of one's mother's sisters. The system of relationship in respect of the descendants of the paternal aunt has already been described.

A man applies the term *Mammal* to his mother's brothers, real and collateral, and himself stands in relationship of *Sare marri* to him. A woman too uses the same term and stands in the relationship of *Sare miar* to him. The Gonds thus restrict the term *Mamal* to indicate one's mother's brothers to the exclusion of one's father's brothers. The terms and system of relationship in respect of the descendants of the maternal uncle are similar to those in respect of the descendants of one's paternal aunt. It is worth noticing in this connection that the mother's brother's children are classed in nomenclature with the father's sister's children. As will be explained later, this is a natural consequence of the cross-cousin marriage.

In the third generation above his or her own a person uses the term *Tado* for the father's father and his brothers, who in return use the terms *Tang marri* (grandson) and *Tang miar* (grand-daughter) according to the sex of the speaker. The term *Tado* is also used for the husband of one's mother's father's sister. As against this a person uses the term *Akko* for his or her mother's father and his brothers. The term is extended to the husband of father's father's sister also.

As in the case of grandfathers, a distinction is made between the father's mother and mother's mother. The term *Aji* is used for the former while the term *Kako* is used for the latter.

In the third generation below his or her own a person uses the term 'grandson' and 'granddaughter' for all persons who are children of those for whom the terms *Marri* (son), *Miar* (daughter), *Sare marri* (nephew) and *Sare miar* (niece) are used. In other words, the terms 'grandson' and 'grand-daughter' are used for the children of one's own sons and daughters as well as for the children of one's own and one's spouse's brothers' and sisters' sons and daughters. The children of the cross-cousins' sons and daughters are also classed with these.

Among the Gonds therefore all the kinsfolk belonging to the second generation below one's own are grouped as grandsons and grand-daughters irrespective of the line and side they belong to, by virtue of their descent.



A special relationship besides the one described above—and this is unique among the Gonds—is conceived between certain grandparents and grandchildren. A man besides calling his son's children 'grandsons' and 'grand-daughters' considers them as his brothers and sisters respectively, and they in return consider him as their elder brother. Similarly, a woman besides calling her daughter's children her grandchildren considers them as her younger brothers and younger sisters, and they in return consider her as their elder sister. She also considers her son's sons and daughters as her *Sarandu* (husband's younger brother) and *Sarandal* (husband's younger sister) respectively. This special relationship makes it necessary for one to discriminate between the children of the son and those of the daughter.

The main characteristics of the system of kinship among the Gonds, as described above, may now be summarised below:—

- (i) The female lines on the mother's side are merged into the male lines on the father's side, and correspondingly the female lines on the father's side are merged into the male lines on the mother's side.
- (ii) The terms for the descendants of (a) mother's sisters and father's brothers, (b) father's sisters and mother's brothers, (c) sisters and male cross-cousins, and (d) one's own and brothers and female cross-cousins, are identical.

#### *Kinship Terms extended to others*

The system of relationship described so far, refers to those with whom genealogical relationship can be traced. On a close observation of Gond society it is found that these people apply the terms of kinship not merely to those genealogically related but also to those who are not so related. We must see how these persons come into the Gond system of relationship.

A Gond, when he applies a term of relationship to a person not genealogically related to him, considers two things, the first, whether the person from the point of his birth, belongs to his clan or phratry in which he is prohibited from marrying, the second, to what generation he or she belongs. On these two considerations depend his choice of the term to be used for that person. If the person belongs to his clan or phratry one of the terms, which vary according to the generation to which the person belongs, used for his kinsfolk on the father's side, will be applied. That is, if the person be a man, he will either be called *Tado* (father's father), *Pepi* or *Phara baba* or *Chudur baba* (father's elder or younger brother), *Dada* (elder brother) or *Tammur* (younger brother), *Marri* (son) or *Tang marri* (grandson), and if the person be a woman the term applied will either be *Kako* (paternal

grandfather's sister), *Ati* (paternal aunt), *Takka* or *Selad* (elder or younger sister), *Miar* (daughter) or *Tang Miar* (grand-daughter). Similarly, if the person belongs to a clan or phratry in which he may marry, one of the terms used for the kinsfolk on the mother's side will be applied as in the preceding case taking into account the person's generation and sex.

It may be pointed out that this sort of application of kinship terms is not widely recognised. The bond of neighbourhood, friendly relations and sometimes even polite mode of address make a person use these terms. Occasionally such relationships, too, carry with them certain social functions and disabilities. In the absence of one's maternal uncle a man to whom the term *Mamal* can be applied is made, in certain circumstances, to discharge the functions of the maternal uncle; as with the term *Mamal*, so with some other terms. It should, however, be borne in mind that these terms of kinship applied to those not genealogically related are more terms of address, indicating their status in the society in reference to the person who uses the terms, than terms of blood relationship. In case of persons belonging to one's own clan, however, there is a dim perception of blood relationship, because of the belief that the clansmen are descended from a common ancestor.

#### *Wider Relationship*

Besides the terms of relationship that can be applied to the individual or groups of individuals within the clan or phratry, they possess other wider terms connoting wider relationship. Men of the same clan and also of the same phratry call themselves 'brothers' (*Bhaiband*, *Dudhbhai*, *Dadabhai*, etc.) and call others with whom they can have relationship as affines *Mamabhai* (maternal uncle's sons), *Soyre* (relatives by marriage), etc. The former relationship includes all kinsmen and their male descendants in the male lines on the father's side while the latter includes all kinsmen and their male descendants in the male lines on the mother's side. The above terms of relationship are applied also to the relationship which is conceived among the different clans. The clans included in the phratry are 'brother clans' (*Bhiaband got*, or *Pari*, *Dadabhai got*, etc.) while they stand in relationship of 'cross-cousin' clans (*Mamabhai got*) to those in the other phratries.

Thus the fundamental concept that leads a man to frame his relationship with other persons is his marriageability or non-marriageability in a clan or phratry to which those persons belong.

#### *Nomenclatures not mere Terms of Address*

The nomenclatures described above, as has been already noted, are not mere terms of address. They connote definite social functions, privileges,

obligations and disabilities pertaining to the person for whom the term is used. Thus, for example, there is a special relationship between a man and his mother's brother. They have certain definite duties and privileges towards one another. The social relations do not apply merely to the real brothers of one's own mother, but to all those whom the mother considers as her brothers.

Again, the classificatory terms of relationship, though indicative of status in society in their origin, are at present also an expression of consanguinity to those who apply them. Thus the classificatory system of relationship among the Gonds has in course of its development acquired a dual significance—expression both of status and of consanguinity. In fact close observation of the use of these terms by the Gonds reveals the fact that the terms are used at present less to express status than the ties of consanguinity when applied in relation to the people within the kin-group. A quite apposite tendency in the application of the terms is, however, discernible when applied to those outside the kin-group.

#### *Advance towards the Descriptive System*

The Gonds, especially those who are more advanced and Hinduised, if questioned, explain their relationship more exactly than is possible in a community in which the classificatory system prevails. In fact, among them the classificatory system is gradually being displaced by the descriptive system of relationship of their Hindu neighbours. For example, a man would distinguish his child from that of his brothers sometimes by making it clear by prefixing the term 'younger brother' or 'elder brother' to the term for son or daughter.<sup>6</sup> A man also distinguishes his father's brother's sons and daughters from his own brothers and sisters by telling that they are his father's brother's children—especially when it is intended to clear the position to a stranger.

The Hinduised Gonds as has been pointed out before, have directly borrowed some terms from their Hindu neighbours, and these terms are *Kaka* for father's younger brother and *Putnya* or *Bhatija* for brother's son and other. The adoption and use of such terms has led to the disappearance of the group relationship terms among them.

The Gonds have, indeed, reached a stage of mental development in which they are no longer satisfied with the nomenclature of the purely classificatory system, and have begun to make use of terminological distinction

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<sup>6</sup> *Tammurna-Marri*—younger brother's son. *Kuchona-Marri*—mother's younger sister's son. *Pepina-Marri*—father's elder brother's son.

between near and distant relatives. This tendency is more discernible in the kinship group on the father's side, especially in the male line. The family system of the Gonds that gave rise to the classificatory system of relationship, being completely changed now, an attendant change in the system of relationship on this line is natural. The system of relationship that obtains among the majority of the Gonds is, in fact, untrue to the family system which they actually possess at present, but it is because of the fact that "the form of family advances faster of necessity than systems of consanguinity, which follow to record the family relationships."

### *The Affines*

So far the system of relationship in respect of the kinsfolk has been described. The system in respect of the affines, that is, in respect of those who are connected by marriage, may now be described.

### *Kinsfolk of the Spouse*

The Gondi term for wife is *Maijo* and for husband is *Muido*. A person uses the terms *Tara murial* and *Sarandu* for the elder and younger brothers respectively of his or her spouse. Similarly the terms *Tangorar* and *Sarandal* are used for the elder and younger sisters respectively of the spouse.

A man addresses his wife's sister's husband as his brother, younger or elder, and the collective term for the husbands of sisters generally is *Saglal*. A woman applies the terms *Boriyar* and *Seriyar*<sup>7</sup> to the wives of her husband's elder and younger brothers respectively; but the term of address is sister. The wives of brothers address one another as sisters, elder or younger.

The terms of relationship used for the descendants of the above relatives of the spouse are identical with those used for descendants of the kin. A man calls his *Tangorar's* and *Sarandal's* children *Marri* (son) and *Miar* (daughter), while a woman applies these terms to the children of her *Tara murial* and *Sarandu*. In the same way a man uses the terms *Sare marri* (nephew) and *Sare miar* (niece) for the children of his wives' brothers and the same terms are used by a woman for the children of her husband's sister.

A characteristic feature of the relationship system in respect of the spouse's kinsfolk—in his or her own generation—is that, as in the case of near kinsfolk different terms are used for them according as they are male or female and older or younger than the spouse.

<sup>7</sup> Morgan, *Ancient Society*, p. 388.

<sup>8</sup> In the Nagpur plains the term *Seriyar* is used for the husband's brother's wife in general and the prefix *Pharo* (great) or *Chudur* (little) is used while applying the term.

This distinction between the nomenclatures for the elder and younger kin of one's spouse has intimate correlation with certain social customs of these people. Among the Gonds according to the custom of the Levirate a man is permitted to marry his deceased elder brother's widow, but he is under no circumstances allowed to marry his younger brother's widow. Again according to the custom of the Sororate, which is widely prevalent among these people, a man may marry his wife's younger sister but not her elder.

There are no special terms of relationship for the *Yena* (male cross-cousin) and *Sango* (female cross-cousin) of the spouse, but they are addressed as brother and sister respectively by a person, and in many a case this relationship actually coexists because of the wide prevalence of the cross-cousin marriage.

The terms used for the father and mother of the spouse are *Murial* and *Porar* respectively. These terms are not confined to the actual father-in-law. The term 'father-in-law' is extended to the brothers of the actual father-in-law and to the husbands of the spouse's maternal aunts. Similarly the term 'mother-in-law' is extended to the sisters of the actual mother-in-law and to the wives of the father-in-law's brothers. The terms of address, however, are quite different. The father-in-law and mother-in-law are addressed respectively as *Mama* and *Mami* or *Ato*.<sup>9</sup>

The maternal uncle, and paternal aunt of the spouse are addressed in terms used for paternal uncle and maternal aunt respectively. No special terms of relationship exist for these relatives, but because of the cross-cousin marriage, one's spouse's maternal uncle and paternal aunt are generally the other's father or father's brother and mother or father's brother's wife respectively.

The terms used by a person for the paternal grandparents are used for maternal grandparents of the spouse and *vice versa*. Besides this a person conceives relationships of *Tara mural* (spouse's elder brother) and *Tangorar* (spouse's elder sister) towards the spouse's father's father and mother's mother respectively.

To sum up therefore the main characteristic of the Gond system of relationship so far as the affines (kinsfolk of the spouse) are concerned is that the same terms are applied by a Gond wife to certain relatives of her husband as the husband applies to his wife's relatives of the same or similar class.

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<sup>9</sup> A woman addresses her mother-in-law as *Aya* also.

*Spouses of the Kinsfolk*

In his or her own generation on the father's side, a person uses the following terms of relationship for the spouses of his or her kinsfolk:—

1. *Ange*—Elder brother's wife.
2. *Tammur koriar*<sup>10</sup>—Younger brother's wife.
3. *Bhato*—Elder sister's husband.
4. *Selad saṛe*—Younger sister's husband.

On the mother's side in his or her own generation a person uses the following terms for the spouses of his or her kin:—

1. *Takka* or *Bai* or *Selad*—Wife of the male cross-cousin.
2. *Dada* or *Tammur*—Husband of the female cross-cousin.

There are no special terms for the above relatives. The terms which are used for sisters and brothers are used for the spouses of one's male and female cross-cousins.

There are other relatives about whom some remarks are necessary. A man or a woman uses the term *Pari* and *Paryal* for the father-in-law and mother-in-law respectively of his or her son and daughter. These terms are respectively extended to elder and younger brothers of the *Pari* and to the *Boriyar* and *Seriyar* and even to the sisters of the *Paryal*.

A man addresses his son's or daughter's mother-in-law as 'Sister' while a woman addresses her son's or daughter's father-in-law as 'brother'. No special elucidation is necessary to understand this characteristic. This is a natural outcome of the institution of the cross-cousin marriage; and in many a case this relationship precedes the marriage of their children.

The terms of relationship used for the wives of the father's elder and younger brothers are those which are used for the mother's elder and younger sister respectively. Thus the term *Peri* or *Phara Yal* is used for the father's elder brother's wife and the term *Kucho* or *Chudur yal* for the wife of father's younger brother. Again the term used for the husband of father's sister is the same which is used for mother's brother. The term is *Mamal*.

The terms of relationship used for the husbands of mother's elder and younger sisters are identical with those used for the father's elder and younger brothers respectively that is, the term *Pepi* or *Phara baba* is used for the husband of mother's elder sister while the term *Chudur baba* or *Kaka* is used

<sup>10</sup> In the Chanda District a woman calls *Biye* to her younger brother's wife.

for the husband of the younger sister. Similarly the term used for the mother's brother's wife is identical with the term of address used for the father's sister.

A man uses the term *Koriar* for his son's wife while the term *Sare*<sup>11</sup> is used for the husband of the daughter. He addresses the wife of his *Sare marri* (sister's son) as 'daughter' and the husband of his *Sare miar* (sister's daughter) as 'son'. A woman, too, uses the same terms except that she uses the terms 'son' and 'daughter' for the spouses of her brother's children.

A man uses the term *Koriar* for the wife of his son's son, but the term is conceived in the sense of 'younger brother's wife'. For the husband of his son's daughter he uses the term *Sare*, the relationship being conceived in the sense of 'younger sister's husband'. As against this a woman uses quite different terms for these relatives. To her son's son's wife she applies the term *Seriyar* (husband's younger brother's wife), while she uses the term *Tammur* or *Tang marri* for the husband of her son's daughter.

A man uses the term *Tang miar* or *Selad* for the wife of his daughter's son and the term *Tang marri* or *Tammur* for the husband of his daughter's daughter. In case of a woman the terms are again quite different. She uses the term *Koriar* for the wife of her daughter's son, who in return calls her *Aya*,<sup>12</sup> while the term *Tang marri* or *Selad sare* (younger sister's husband) is used for the husband of her daughter's daughter.

#### *Identity of Terms*

On a perusal of the system of relationship described above the thing that strikes one most is the identity found between some of the kinship terms and of the terms used for the affines. Because of this identity some of the affines can also be grouped under the classificatory nomenclatures along with the kinsfolk. Another thing which deserves special attention is the combination of different and several relationships in the personality of one and the same person. A categorical presentation of the classificatory system of the Gonds as given below will incidentally show the groups of relatives for whom identical terms are used by the Gonds :—

*Tado*.—Father's father and his brothers, mother's father's sisters' husbands, Mother's maternal uncles and spouse's mother's father.

*Akko*.—Mother's father and his brothers, Father's father's sisters' husbands, Father's maternal uncles and spouses' father's father.

<sup>11</sup> In some locality, specially in the western Satpura region the terms *Sanne*, *Sanne Marri* and *Sanne Miar* are used respectively for son-in-law, nephew and niece.

<sup>12</sup> The term is conceived here in the sense of her husband's elder sister.

*Aji*.—Father's mother and her sisters, Mother's father's sisters, and Spouse's mother's mother.

*Kako*.—Mother's mother and her sisters, Father's father's sisters and Spouse's father's mother.

*Dao, Pepi and Chudur baba*.—Father, Father's brothers and Mother's sisters' husbands (Maternal uncle of the spouse is addressed as paternal uncle).

*Dai, Peri and Kucho*.—Mother, Mother's sisters, and wives of father's brothers (Paternal aunt of the spouse is addressed as maternal aunt).

*Mamal*.—Mother's brothers and Father's sisters' husbands (Father-in-law is addressed as *Mamal*).

*Ati or Mami*.—Father's sisters and mother's brothers' wives (mother-in-law is addressed as *Mami*).

*Tannal or Dada and Tammur*.—One's own brothers, sons of father's brothers and of mother's sisters, Husbands of the spouse's sisters and husbands of female cross-cousins.

*Takka or Bai and Selad*.—One's own sisters, Daughters of father's brothers and mother's sisters, wives of the spouse's brothers and wives of male cross-cousins.

*Yena*.—Sons of mother's brothers and sons of father's sisters.

*Sango*.—Daughters of mother's brothers and daughters of father's sisters.

*Marri and Miar*.—One's own children, children of brothers in case of a man and those of sisters in case of a woman, Children of the spouse's sisters in case of a man, and those of the spouse's brothers in case of a woman, and Children of the female cross-cousin in case of a man, and those of male cross-cousin in case of a woman.

*Sare marri and Sare miar*.—Children of sisters in case of a man and of brothers in case of a woman, Children of the spouse's brothers in case of a man and the spouse's sister in case of a woman, and Children of the male cross-cousins in case of a man and of the female cross-cousins in case of a woman.

*Tang mari and Tang miar*.—Children of one's own sons and daughters, Children of brothers', sisters' and cross-cousins' sons and daughters, and also Children of the spouse's brothers' and sisters' sons and daughters.



*Precedence of Relationship*

When more than one relationship can be traced in one and the same person, precedence is given to one of those relationships, and observances of social relations and enjoyment of privileges depend upon the relationship getting precedence. This is worth noticing because the precedence of the relationship over another is ultimately determined by, and in its turn explains, certain institutions prevalent among the Gonds.

Whenever a man's *Ange* (elder brother's wife) is his *Tangorar* (wife's elder sister) the former relationship gets precedence over the latter. In case she is his *Sango* (female cross-cousin), the relationship of *Tangorar* will get precedence over that of *Sango*. A man may marry his *Sango* as well as his widowed *Ange*. He is however not eligible to marry his *Tangorar* and has even to observe mutual avoidance in relation to her.

Whenever a man's *Tammur koriar* (younger brother's wife) is his *Sarandal* (wife's younger sister) and also his *Sango* the relationship of *Tammur koriar* will have precedence over the other two. He is forbidden to marry her when she becomes a widow, and he has to observe mutual avoidance in relation to her, while he may freely jest with his *Sarandal* as well as *Sango* and even marry them.

*Relationship Taboos*

The relationships which have one or other taboos attached to them are those of *Tara murial* (husband's elder brother) and *Tammur koriar* (younger brother's wife) and of *Tangorar* (wife's elder sister) and *Selad sare* (younger sister's husband). Each member of the above pairs of relatives observes mutual avoidance in respect of the other member of his or her pair.

This taboo of mutual avoidance prohibits a man from speaking to or having any direct communication or dealing with his younger brother's wife. So rigidly do they observe this taboo of mutual avoidance that a woman is prohibited from cleaning the dish from which her husband's elder brother has taken his food and also from washing his clothes. In some orthodox families it is even supposed indelicate for a woman to serve him his food. A woman does not mention the name of her husband's elder brother.

A man also observes mutual avoidance in respect of his wife's elder sister, though not so rigidly as in the case of his younger brother's wife. He is not permitted to touch her, and it is his duty to avoid close contact with her. In some localities the restrictions imposed on these relatives are

almost identical with the restrictions imposed on the *Tara murial* and *Tammur kopiar*.

### *Joking Relations*

A custom opposed to the one described above, permitting and encouraging familiarity between certain relatives, obtains among the Gonds. There are certain relatives as between whom Gond Society not only permits, but also regards as appropriate, jest and joke and banter. Such relatives when they meet usually joke and make opprobrious or obscene remarks at the expense of the other.

Kinsfolk and affines between whom such relation exists are:—

- (i) Children of sisters and brothers, that is, cross-cousins (*i.e.*, *Yena* and *Yena*; *Yena* and *Sango*; *Sango* and *Sango*);
- (ii) A man and his wife's younger brothers and sisters (*Bhato* and *Sarandu*; *Bhato* and *Sarandal*);
- (iii) A man and his brother's wife's brothers and sisters;
- (iv) A woman and her husband's younger brothers and sisters (*Ange* and *Sarandu*, *Ange* and *Sarandal*);
- (v) A man and his mother's father and maternal grandfather's sister (*Tang marri* and *Akko*, *Tang marri* and *Aji*);
- (vi) A man and his father's mother and his paternal grandmother's brother (*Tang marri* and *Aji*, *Tang marri* and *Akko*);
- (vii) A woman and her mother's father (*Tang miar* and *Akko*);
- (viii) A woman and her father's mother (*Tang miar* and *Aji*).

On a careful observation it will be revealed that this system of joking relationship is in agreement with the system of exogamy prevalent among the Gonds. The three main characteristics of the Gond exogamy are:—

- (1) A person may not marry in his clan and phratry; so also a person can never have his joking relatives in his own clan and phratry.
- (2) A person is prohibited from marrying his or her kinsfolk in the generations just above or below his own; thus the relatives of a person in those generations can never have joking relation with him or her.
- (3) A person is debarred from marrying his deceased younger brother's wife, wife's elder sister and some others with whom also he is forbidden to joke.

It may be pointed out here that among the Gonds marriages between certain grandparents and grandchildren are not forbidden; and those

grandparents and grandchildren between whom marriage is not forbidden are therefore allowed to jest and joke with each other freely.

### *Origin of the Kinship System of the Gonds*

The characteristic features of the classificatory system of the Gonds which have been described above may now be noted. Firstly certain kinsfolk are grouped to be sharply distinguished from others similarly grouped. Such groupings mainly are:—(i) Father and his brothers to be distinguished from mother's brothers, (ii) Father's sisters to be distinguished from mother's sisters, (iii) Children of father's brothers to be distinguished from those of mothers' brothers, (iv) Children of father's sisters to be distinguished from those of mother's sisters, and (v) Children of brothers to be distinguished from those of sisters. Secondly there are group relationship terms, such as *Marri* (son), *Miar* (daughter), *Tannal* or *Tammur* (elder or younger, brother), etc., designating relationship between groups and not individuals. Thirdly identity is established between certain kinsfolk and affines, and different kinds of relationship are combined in the personality of one and the same person.

The origin of all these characteristics is to be sought in the different social institutions of the Gonds—both extant and non-extant.

### *Dual Organisation*

Like all other primitive people with clans and phratries the Gonds too group all kinsfolk of the same generation together, making, however, distinction according to sexes. Thus a Gond groups his father and his father's brothers, real and collateral, together. He does the same in case of his father's sisters, real and collateral. A man on the same principle groups the children of his brothers, and so also does he group his brothers and sisters with the children of his father's brothers.

The Gonds also distinguish certain kinsfolk grouped together from other kinsfolk similarly grouped. This feature is intimately connected with the system of exogamy among the Gonds. Under this system a man's parent must belong to two different clans belonging to two different phratries and this naturally results in the grouping of mother's and father's kinsfolk in two distinct bodies. This explains the distinction that is always made in the Gond community between the mother's brothers and the father's brothers, father's sisters and mother's sisters. This also explains why the children of sisters are distinguished from the children of brothers and one's own children.

A close examination of certain features of the relationship system and exogamy of the Gonds suggests that their relationship system largely originated in the primitive dual organisation of the Gond community, which, though it has long since disappeared, has left unmistakable traces in the present organisation.

It has already been noted that among the Gonds the children of brothers as well as the children of sisters are grouped together in the same category of relationship. With this goes the most rigorous prohibition of marriage. Children of brothers, real or collateral, and in the same way children of two sisters, real or collateral, are not allowed according to the law of exogamy to marry among themselves.<sup>13</sup> This type of exogamy would not follow necessarily from a social state in which there are more than two exogamous groups. In a society with male descent the children of two brothers would belong to the same clan and phratry, and the principle of exogamy would no doubt prevent marriage between them. But if the sisters were married into different clans and phratries the principle of exogamy would not debar marriage between their children. Similarly in a matrilineal society, the children of two sisters would belong to the same clan and phratry but it cannot be the case with the children of brothers who might marry into different exogamous social groups.

The case, however, would be quite different if the society were divided into exogamous moieties. Whether the descent is patrilineal or matrilineal, children of brothers, and so also of sisters, must belong to one and the same exogamous moiety in such a society. The natural consequence of this will be that children of brothers will be eligible as consorts of the children of sisters, thus leading to the cross-cousin marriage which is so widespread among the Gonds of all sections. It would also be a natural consequence of such dual organisation that the mother's brother's children would be classed with the father's sister's children, as we find among the Gonds.

Another peculiar feature of the Gond exogamy supports the view that the Gond society was once divided into two exogamous sections or moieties. The marriage between certain grandparents and grandchildren is not forbidden among the Gonds. A woman may marry her deceased husband's son's son provided he is not her own son's son, as well as her brother's daughter's son. But she is strictly prohibited from marrying her or her sister's daughter's son and also her brother's son's son. She regards her daughter's children as her brothers and sisters. In a patrilineal society with

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<sup>13</sup> This prohibition of marriage is applicable to the children of two men as well as children of two women belonging to the same clan and phratry.

more than two exogamous phratries a woman's brother's son's son will no doubt belong to the clan and phratry in which she is born, but her or her sister's daughter's son may belong to a phratry other than her own and in which she may have her mate. On the other hand if the descent is matrilineal, her or her sister's daughter's son necessarily belong to her own phratry, while her brother's son's son may not. But if the society, whether patrilineal or matrilineal, has the dual organisation, a woman's brother's son's son, as well as her own or her sister's daughter's son, necessarily belongs to her own phratry into which she is prohibited from marrying.

Again, while a man may marry his elder brother's daughter's daughter or sister's son's daughter, his union with his son's or his brother's son's daughter or with his sister's daughter's daughter is totally disallowed under the Gond system of exogamy. This feature of Gond exogamy, too, points to the conclusion that the Gonds possessed dual organisation in the past.

In fine, the grouping of certain kinsfolk and their sharp distinction from such other groups must have originated in the primitive social state when there were only two exogamous phratries or moieties among the Gonds whose social organisation is still predominantly dualistic in nature. The Hill Marias of Baster, we know, once possessed exogamous moieties<sup>14</sup> and the phratries that prevail among them now are evolved out of the dual organisation that preceded the present social state. Even the Gonds inhabiting the Western Satpura region and Northern Nagpur plains are mainly divided into two exogamous phratries. The unmistakable evidence of group marriage, and the existence of cross-cousin marriage and grandparent-grandchild marriage, all point to the fact that the primitive social organisation of the Gonds was dual and in this dual organisation is to be sought the origin of the classificatory system of relationship which we still find among the Gonds.

#### *Group Marriage explains Group Relationship*

The characteristic of group relationship originated in the existence of group marriage in a former stage of social development among the Gonds. The terms such as *Marri* (son), *Miar* (daughter) and others which we find in the Gond system of relationship designate relationship, as has been pointed out before, between groups and not between individuals. Group relationship is in fact at the basis and almost invariably forms a trait of the classificatory system as found among the Gonds and many other primitive tribes. Many eminent authorities are of the opinion that this trait resulted from the

<sup>14</sup> Russell and Hiralal, *Tribes and Castes of the Central Provinces*, p. 65.

group marriage or organised sexual communism which is supposed by Morgan to be an intermediate phase between promiscuity and monogamy. "Many features of the classificatory system of relationship, otherwise difficult to understand, become readily explicable if they grew out of a state of society in which a group of men had a group of wives in common."<sup>15</sup> According to Frazer "the only reasonable and probable explanation of such a system of group relationship is that it originated in a system of group marriage, that is, in a state of society in which groups of men exercised marital rights over groups of women, and the limitation of one wife was unknown." Such a system of group marriage, according to him would explain very simply why every man and every woman claim as their sons and daughters group of men and women whom they did not bear.<sup>16</sup>

The system of relationship of the Gonds still possesses features which leads one to infer the existence at one time of such marriage among them; and this we are not merely left to infer from the surviving group relationship terms; but also from some of their surviving social institutions and customs—levirate, sororate and mutual avoidance—which become explicable only as lingering relics of the group marriage.<sup>17</sup>

#### *Cross-Cousin Marriage*

The conclusion that the classificatory system of relationship of the Gonds is dependent on the dual organisation and the group marriage by no means explains all its features.

The other features of the system that are yet to be explained are:—

- (i) The identity to be found between the terms of relationship and address applied to near kinsfolk and relatives by marriage, and
- (ii) The combination of different relationships in the personality of one and the same person.

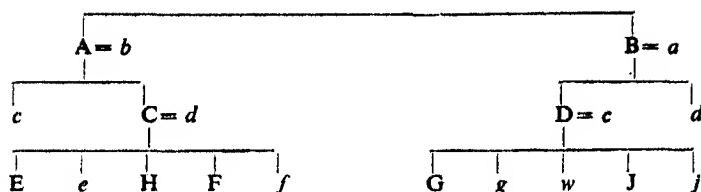
The fact that relatives by marriage are classed with near kinsfolk at once suggests marriage of a certain kind, which transforms certain kinsfolk into relatives by marriage (affines).

The cross-cousin marriage is, apart from being widely prevalent, much favoured among the Gonds. The characteristics enumerated above resulted from this form of marriage. The following diagram will make this clear. Suppose that H marries w and capitals stand for men and small letters for women.

<sup>15</sup> Rivers, W. H. R., *op. cit.*, p. 78.

<sup>16</sup> Frazer, *op. cit.*, Vol. I, p. 304.

<sup>17</sup> This will be dealt with fully in the chapter 'Gond Exogamy in Evolution'.



From the above diagram it will be clear that D is mother's brother, father's sister's husband and wife's father of H who is married to w, his cross-cousin (*Sango*). In the same way c, who was his mother's brother's wife or father's sister, has now become his mother-in-law. The relationship of w to C, her father-in-law, and to d, her mother-in-law, can similarly be explained. Thus we find that the identity of terms applied to mother's brother, father's sister's husband and wife's father, and so also the identity of terms applied to father's sister, mother's brother's wife and wife's mother, have resulted from the cross-cousin marriage. Not only are the terms for all these relatives identical, but in many a case these three relationships are combined in the personality of one and the same person.

The other combinations of relationships that have been observed while describing the system of relationship can also be shown to have resulted from this form of marriage only. From the same diagram it will be seen that the brothers and sisters of w were cross-cousins of H before his marriage with her. As a result of the marriage G, g, J and j have become *Tara murial*, *Tangorar*, *Sarandu* and *Sarandal* respectively of H. Correspondingly, the elder and younger brothers and sisters of H have also become the same type of relatives of w.

Among the Gonds sometimes a number of brothers marry a number of sisters who are their cross-cousins, and this leads to the combination of three kinds of relationships in the personality of one person, who is a cross-cousin. In the above diagram, if we suppose that the brothers H, E and F marry the sisters w, g and j respectively, the relationships that will result therefrom will be as follows:—

E will not only be w's *Bhato* but her *Tara murial* (husband's elder brother); F will not only be her *Sarandu* (husband's younger brother), but also her *Selad sare* (younger sister's husband). In the same way g will be H's *Tangorar* (wife's elder sister) as well as his *Ange* (elder brother's wife), and j will be both his *Sarandal* (wife's younger sister) and *Tammur korial* (younger brother's wife).

This cross-cousin marriage will also explain why the mother's brother's son's or father's sister's son's (*Yena's*) wife is addressed as sister and the

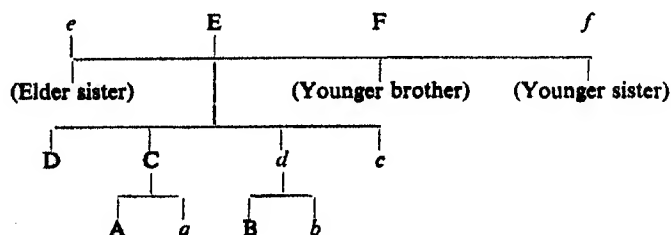
mother's brother's daughter's and father's sister's daughter's (*Sango's*) husband is addressed as brother. In this is also found the origin of the identical terms of address used by the husband and the wife for the same class of relatives of each other. Thus, for example, H addresses his wife's maternal uncle as his paternal uncle, and correspondingly w addresses her husband's maternal uncle as her paternal uncle. Such relationships exist not only in theory but also in actual fact, as the cross-cousin marriages continue from generation to generation.

### *Grandparent-Grandchild Marriage*

There are, however, certain relationship terms, the origin of which cannot be explained by the existence of the cross-cousin marriage. A man considers his son's children as his brothers and sisters, and a woman considers her daughter's children as her brothers and sisters. Besides this a man or a woman calls his or her elder sister's son *Mama* (maternal uncle) and her daughter *Kucho* (maternal aunt or father's younger brother's wife). This complex relationship which seems rather perplexing at the first sight becomes clear on examining the form of marriage of which it is the outcome.

As pointed out before, among the Gonds marriages between certain grandparents and grandchildren are permitted. A man may marry his elder brother's daughter's daughter or his sister's son's daughter. He may also marry his mother's father's sister or the widow of his paternal grandfather if she is not his father's real mother. In short the kin of different sex, two generations apart from each other, if they belong to different phratries, are eligible to be each other's consort. Such unions no doubt are now-a-days rare.

How grandparent-grandchild marriage is responsible for this peculiar trait of the Gond system of relationship will be clear from the following Table:<sup>18</sup>



In the above diagram F marries b who is his elder brother E's daughter's daughter. The woman b is a niece (sister's daughter) of D, C and c. As

<sup>18</sup> Capitals stand for men and small letters for women.



soon as F, their paternal uncle, marries her, she becomes their aunt (father's brother's wife), whom they may address as *Kucho* or *Chudur yal*, and her brother B becomes their maternal uncle. The fact that *b* has become the wife of F makes it clear why a woman considers her daughter's daughter as her sister and her daughter's son as her brother. A woman's daughter's daughter can be the wife of the man whose wife she herself also could have been. She and her grand-daughter being potential wives of two brothers are sisters in relation to each other.

The relationships described above also result from another kind of grandparent-grandchild marriage. A man is permitted to marry his mother's father's sister. In the above diagram B marries *f* who is his mother's paternal aunt. Before this marriage he (B) is a nephew of D, C and *c*, but consequent on his marriage with *f* he becomes their father's sister's husband, that is their *Mama*, and his sister *b* becomes their *Kucho* (maternal aunt), she being their maternal uncle's sister.

The husbands of the two sisters are brothers to each other, and so also the wives of the two brothers are sisters to each other. In the grandparent-grandchild marriage that obtains among the Gonds a man and his son's son are eligible to marry the same woman who is their kin; so also a woman and her daughter's daughters are eligible to marry the same man, who is their kin. This leads to the development of a complex system of relationship which we find in a man calling his son's children his brothers and sisters, and a woman calling her daughter's children her sisters and brothers.

### Conclusion

The characteristic feature of the Gond system of relationship has thus to be explained by reference to the different social customs and institutions which they possess or once possessed. Grouping of kinsfolk into categories originated in the exogamous dual organisation of these people, distinct traces of which are discernible even now in their present social organisation. Group relationship originated in group marriage in a state of society in which a group of men exercised marital rights over a group of women and the limitation of one wife was unknown. Identity of terms applied to the kinsfolk and relatives by marriage, and so also combination of different relationships in the personality of one and the same person, resulted from different forms of marriage such as cross-cousin marriage and grandparent-grandchild marriage which obtain or once obtained among these people.

The classificatory system of relationship is shared in common by the aborigines of different parts of the world; indeed, with differences of detail, it is recognised by all totemic people all the world over. Some of the best

authorities<sup>19</sup> on the Australian Tribes hold the view that group relationship, which is one of the main characteristics of the classificatory system, originated in group marriage, primarily in bisection of the community into exogamous halves. Rivers, who carefully investigated the classificatory system in many different communities, was of opinion that "the kind of society which most readily accounts for its chief features is one characterised by a form of marriage in which definite groups of men are the husbands of definite groups of women".<sup>20</sup>

### *The Gond System of Relationship is of Dravidian Type*

The classificatory system of relationship combined with totemism and exogamy is widespread among the castes and tribes of the Dravidian race to which the Gonds also belong. The Gond system of relationship agrees with that of the Tamil and Telugu speaking people. In many Telugu castes inhabiting the south-eastern part of the Central Provinces (Chanda District) the system of relationship is similar to that which prevails among the Gonds. The group relationship terms have no doubt disappeared from among them, but the structure of the system remains the same.

From the structural point of view the Gond system of relationship is also akin to the system that obtains among the Oraons<sup>21</sup> and the Todas.<sup>22</sup> The system of relationship among the Kharias,<sup>23</sup> a Kolarian tribe, is structurally similar to that of the Gonds, but is somewhat advanced in nature.

### *Gond System and Seneca-Iroquois System*

The Gond system of relationship, like those of many Tamil, Telugu and Kanarese speaking peoples, is substantially identical with that of the Seneca-Iroquois Indian of North America.<sup>24</sup>

The Seneca-Iroquois system,<sup>25</sup> however, differs from that of the Gonds in some respects. In the generation below his own, a Gond man calls the

<sup>19</sup> Lorimer Fison, *J. A. I.*, XXIV, 1895, p. 368.

Dr. Howitt, *Native Tribes of South East Australia*, pp. 157 and 174.

Messrs. Spencer and Gillen, *Native Tribes*, pp. 55-59, and *Northern Tribes*, p. 95.

<sup>20</sup> Rivers, W. H. R., *op. cit.* App. I, p. 192.

<sup>21</sup> Roy, S. C., *The Oraons of Chota Nagpur*, pp. 345-58.

<sup>22</sup> Rivers, W. H. R., *The Todas*, pp. 483-94.

<sup>23</sup> Roy, S. C., *The Kharias*, Vol. I, pp. 146-58.

<sup>24</sup> Morgan, *System of Consanguinity and Affinity of Human Family*, pp. 386-98 with tables pp. 511 sqq., 523 sqq. and *Ancient Society*, pp. 435-52.

<sup>25</sup> Morgan, *Ancient Society*, pp. 447-52.

son and daughter of his male cross-cousin (son either of his father's sister or of his mother's brother) his 'nephew' (*Sare marri*) and 'niece' (*Sare miar*) respectively. The Seneca-Iroquois, however, would use instead the terms 'my son' (*Ha-ah'-wuk*) and 'my daughter' (*Ka-ah'-wuk*) for the children of his male cross-cousin. Again a Gond uses the term 'son' and 'daughter' for the children of his female cross-cousin, while a Seneca-Iroquois would use the terms 'my nephew' (*Ha-yă'-wan-da*) and 'my neice' (*Ka-yă'-wan-da*) for the children of his female cross-cousin.

Among the Gonds, a sharp distinction is made between the parents of the father and those of the mother, while no such discriminating terminology obtains among the Seneca-Iroquois who use the same terms—*Hoc'-sote* (grandfather) and *Oc'-sote* (grandmother)—both for paternal and maternal grandparents.

#### *Gond System and Australian System*

When we compare the classificatory system of the Gonds with that of the Australian aborigines, who among all the aboriginal tribes possess this system in its most primitive form, it at once strikes us that the classificatory terms for husband and wife are not to be found in the Gond system. An Australian aboriginal would indiscriminately use the term 'wife' for his wife and all her sisters, and an Australian woman would indiscriminately use the term 'husband' for her husband and all his brothers.<sup>26</sup> The Gonds, however, have different terms which would distinguish the spouse from his or her brothers or sisters.

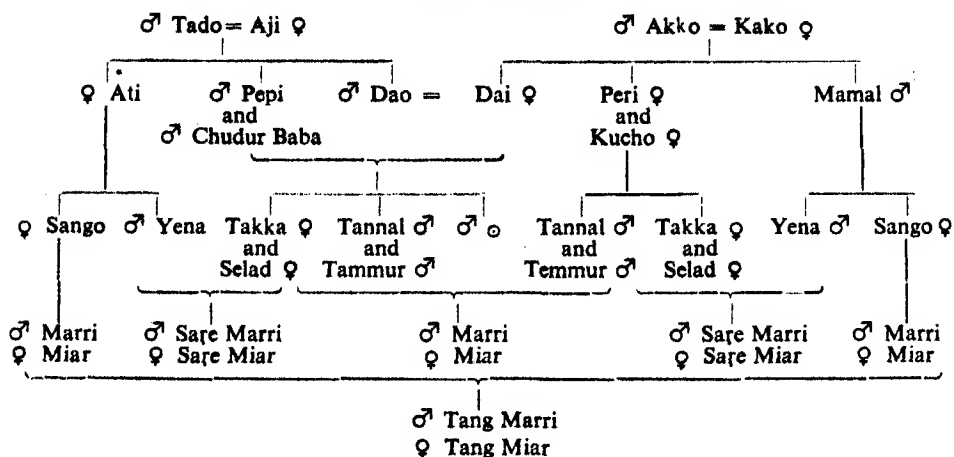
If we are right in supposing that the classificatory system in general is based on group marriage, it appears to follow that the Gond classificatory system is more advanced than that of the Australian aboriginals, inasmuch as the Gond system reveals a stage in social life in which the cardinal feature of a primitive social organisation in its pristine form, namely the recognition of the marital rights of a group of men over a group of women, is no longer to be found. This is in no way surprising if we remember that the Gonds have lived in close contact with their civilized Hindu neighbours for a long time, which fact among others has largely contributed to the advance in their primitive culture.

<sup>26</sup> Frazer, *op. cit.*, Vol. I, pp. 299, 300, 301, 302, 303, 362, 375 sqq., 380, 384, 405, 420, 441, 461, 500.

## Genealogical Table showing Kinship System of the Gonds

(♂ stands for man and ♀ for woman)

⊙ Man who speaks.



The above table giving details of the relationships which a man traces to his kinsfolk in different generations stands good in case of a woman also, with the following exceptions:—

- (i) She classes with her own children in nomenclature the children of her sisters and of her male cross-cousins, to the exclusion of her brothers' children and the children of her female cross-cousins, for whom she uses the terms *Sare marri* and *Sare miar*.
- (ii) A woman conceives a special relationship of 'brother' and 'sister' in respect of her daughter's children as a man conceives it in respect of his son's children. (This has not been shown in this table to avoid confusion. See p. 154.)

## APPENDIX I

*System of Relationship among the Gonds*

(The terms marked with \* are terms of address)

Sl. No.	Description of persons	Relationship in Gondi		Remarks	
		Male speaking	Female speaking		
1	2	3	4	5	
1	Father's father .. ..	Tado; Dada	Tado; Dada	See Nos. 46, 98 and 99	
2	Father's father's brother ..	Tado; Dada	Tado; Dada		
3	Mother's father .. ..	Akko	Akko		
4	Mother's father's brother ..	Akko	Akko		
5	Father's maternal uncle ..	Akko	Akko		
6	Mother's maternal uncle ..	Tado	Tado		
7	Father's father's maternal uncle's son	Akko	Akko		
8	Mother's father's maternal uncle's son	Tado	Tado		
9	Father's father's paternal aunt's son	Akko	Akko		
10	Mother's father's paternal aunt's son	Tado	Tado		
11	Spouse's mother's father ..	Tado	Tado		
12	Spouse's father's father .. ..	Akko; Tara-Murial	Akko; Tara-Murial	See Nos. 1 and 54	
13	Father's father's sister's husband	Akko	Akko		
14	Mother's father's sister's husband	Tado	Tado		
15	Father's mother	Aji	Aji		
16	Father's mother's sister				
17	Mother's mother	Kako; Takka or Bai	Kako; Takka or Bai		See Nos. 60, 99 and 113
18	Mother's mother's sister				
19	Father's maternal aunt .. ..	Aji	Aji		
20	Father's father's maternal uncle's daughter	Aji	Aji		

## APPENDIX I—(Contd.)

Sl. No.	Description of persons	Relationship in Gondi		Remarks
		Male speaking	Female speaking	
1	2	3	4	5
21	Mother's father's maternal uncle's daughter	Kako	Kako	
22	Father's father's paternal aunt's daughter	Aji	Aji	
23	Mother's father's paternal aunt's daughter	Kako	Kako	
24	Father's father's sister .. ..	Kako	Kako	
25	Mother's father's sister .. ..	Aji	Aji	
26	Spouse's father's mother .. ..	Kako	Kako; Boriyar	See Nos. 1 and 67 See Nos. 17 and 69
27	Spouse's mother's mother .. ..	Aji; Tangorar	Aji; Tangorar; Aya*	
<i>Generation next above the Speaker:</i>				
28	Father .. ..	Dao; Baba	Dao; Baba	
29	Father's brother (real and collateral)— (a) Elder .. .. (b) Younger .. ..	Pepi; Phara-Baba Dao; Chudur-Baba; Kaka	Pepi; Phara-Baba Dao; Chudur-Baba; Kaka	The terms Baba and Kaka are borrowed from the Hindus
30	Mother's sister's (real and collateral) husband— (a) Older than father (b) Younger than father	As in No. 29	As in No. 29	
31	Mother's brother, elder or younger	Mamal	Mamal	
32	Spouse's father .. ..	Murial; Mama*	Murial; Mama*	
33	Spouse's maternal uncle .. ..	.. ..	.. ..	He is addressed as 'Paternal Uncle'.
34	Brother's or sister's father-in-law	Mama*	Mama*	
35	Father's sister's (both elder and younger) husband	Mamal	Mamal	
36	Step father .. ..	Dao; Kaka	Dao; Kaka	
37	Mother .. ..	Awai; Dai; Yal	Awai; Dai; Yal	
38	Mother's sister (real and collateral)— (a) Elder .. .. (b) Younger .. ..	Peri; Phara yal Kucho; Chudur yal	Peri; Phara yal Kucho; Chudur yal	

## APPENDIX I—(Contd.)

Sl. No.	Description of persons	Relationship in Gondi		Remarks
		Male speaking	Female speaking	
1	2	3	4	5
39	Father's brother's wife (brother both real and collateral)— (a) Elder .. .. (b) Younger .. ..	As in 38 (a) As in 38 (b) and Kaki	As in 38 (a) As in 38 (b) and Kaki	The term Kaki is borrowed from the Hindus
40	Step mother .. ..	Dai; Yal	Dai; Yal	
41	Father's sister (real or collateral)	Ati; Mami*	Ati; Mami*	
42	Mother's brother's wife ..	Mami; Ati	Mami; Ati	
43	Spouse's mother .. ..	Porar; Mami*	Porar; Mami*	She is addressed as 'Maternal aunt' or 'Paternal uncle's wife'
44	Spouse's paternal aunt .. ..	..	..	
45	Brother's or sister's mother-in-law	Mami*	Mami*	
Speaker's own Generation:				
46	Brother— (a) Elder .. .. (b) Younger .. ..	Tannal; Dada ; Tammur	Tannal; Dada ; Tammur	
47	Father's brother's (real and collateral) son	As in No. 46	As in No. 46	
48	Mother's sister's (real and collateral) son			
49	Father's sister's son .. ..	Yena	Yena	
50	Mother's brother's son .. ..	Yena	Yena	
51	Father's sister's daughter's husband	..	..	
52	Mother's brother's daughter's husband			
53	Spouse's sister's husband ..	Dada or Tammur	Dada or Tammur	The collective term for husbands of sisters is 'Sagial'. In the Western Satpura region the term is 'Tai Muřial'
54	Spouse's elder brother .. ..	Tařa Muřial	Tařa Muřial	

## APPENDIX I—(Contd.)

Sl. No.	Description of persons	Relationship in Gondi		Remarks
		Male speaking	Female speaking	
1	2	3	4	5
55	Spouse's younger brother ..	Sarandu	Sarandu	
56	Elder sister's husband ..	Bhato	Bhato	
57	Younger sister's husband ..	Selad Sare	Selad Sare	
58	Spouse ..	Maijo	Muido	
59	Father-in-law of son or daughter	Pari	Pari or Dada*	
60	Sister— (a) Elder .. (b) Younger ..	Takka; Bai Selad	Takka; Bai Selad	
61	Father's brother's (real and colla- teral) daughter	As in No. 60	As in No. 60	
62	Mother's sister's (real and colla- teral) daughter			
63	Father's sister's daughter ..	Sango; Yeni	Sango; Yeni	
64	Mother's brother's daughter ..	Sango; Yeni	Sango; Yeni	
65	Father's sister's son's wife	Takka* or Selad*	Takka* or Selad*	
66	Mother's brother's son's wife	Takka* or Selad*	Takka* or Selad*	
67	Spouse's elder brother's wife ..	Takka* or Selad*	Boriar; Phara Señiar	Women address each other as sister
68	Spouse's younger brother's wife ..	Selad*	Señiar; Chudur Señiar	
69	Spouse's elder sister ..	Tangorar	Tangorar; Aya*	
70	Spouse's younger sister ..	Sarandal	Sarandal	
71	Elder brother's wife ..	Ange	Ange	In some locality the term is 'Tange'
72	Younger brother's wife ..	Tammur Koñiar	Tammur Koñiar; Biye*	
73	Mother-in-law of son or daughter	Paryal; Takka or Selad*	Paryal	
	<i>Generation next below the Speaker:</i>			
74	Son ..	Marri	Marri	



## APPENDIX I—(Contd.)

Sl. No.	Description of persons	Relationship in Gondi		Remarks
		Male speaking	Female speaking	
1	2	3	4	5
75	Brother's (real and collateral) son	Marri	Sare Marri	In the Satpura region the term is 'Sanne'
76	Spouse's sister's son .. ..	Marri	Sare Marri	
77	Maternal Uncle's daughter's son ..	Marri	Sare Marri	
78	Paternal aunt's daughter's son ..	Marri	Sare Marri	
79	(a) Elder sister's (real and collateral) son	Sare Marri; Mama*	Marri; Mama*	
	(b) Younger sister's (real and collateral) son	Sare Marri	Marri	
80	Spouse's brother's son .. ..	Sare Marri	Marri	
81	Maternal uncle's son's son ..	Sare Marri	Marri	
82	Paternal aunt's son's son ..	Sare Marri	Marri	
83	Son-in-law .. ..	Sare	Sare	
84	Brother's daughter's husband ..	Sare	Marri*	
85	Sister's daughter's husband ..	Marri*	Sare	
86	Daughter .. ..	Miar	Miar	
87	Brother's (real and collateral) daughter	Miar	Sare Miar	
88	Maternal uncle's daughter's daughter	Miar	Sare Miar	
89	Paternal aunt's daughter's daughter	Miar	Sare Miar	
90	Maternal uncle's son's daughter ..	Sare Miar	Miar	
91	Paternal aunt's son's daughter ..	Sare Miar	Miar	
92	(a) Elder sister's daughter ..	Sare Miar; Kucho*	Miar; Kucho*	
	(b) Younger sister's daughter ..	Sare Miar	Miar	
93	Spouse's brother's daughter ..	Sare Miar	Miar	
94	Spouse's sister's daughter ..	Miar	Sare Miar	
95	Son's wife .. ..	Koriar	Koriar	
96	Sister's son's wife .. ..	Miar*	Koriar	
97	Brother's son's wife .. ..	Koriar	Miar*	

## APPENDIX I—(Contd.)

Sl. No.	Description of persons	Relationship in Gondi		Remarks	
		Male speaking	Female speaking		
1	2	3	4	5	
	<i>Third Generation below the Speaker:</i>				
98	Son's son      ..      ..      ..	Tang Marri; Tammur	Tang Marri; Sarandu	See Nos. 1, 2, 46 and 55	
99	Daughter's son      ..      ..	Tang Marri	Tang Marri; Tammur		
100	Brother's son's son      ..      ..	As in No. 98	Tang Marri		
101	Brother's daughter's son	Tang Marri	Tang Marri	See Nos. 46, 53, 57 and 112	
102	Sister's son's son				
103	Sister's daughter's son      ..      ..	Tang Marri	As in No. 98		
104	Male cross-cousin's son's son	Tang Marri	Tang Marri		
105	Male cross-cousin's daughter's son				
106	Female cross-cousin's son's son				
107	Female cross-cousin's daughter's son				
108	Son's daughter's husband      ..      ..	Tang Marri; Selad Saṛe	Tang Marri; Tammur		See Nos. 46, 53, 57 and 112
109	Daughter's daughter's husband      ..      ..	Tang Marri; Tammur	Tang Marri; Selad Saṛe		
110	Spouse's brother's son's son      ..      ..	Tang Marri	Tang Marri; Sarandu	See No. 98	
111	Spouse's sister's son's son      ..      ..	Tang Marri	Tang Marri	See Nos. 1, 2, 17, 18 and 70	
112	Son's daughter      ..      ..	Tang Miar; Selad	Tang Miar; Sarandal		
113	Daughter's daughter      ..      ..	Tang Miar	Tang Miar; Selad		
114	Brother's son's daughter      ..      ..	As in No. 112	Tang Miar		
115	Brother's daughter's daughter	Tang Miar	Tang Miar		
116	Sister's son's daughter				
117	Sister's daughter's daughter      ..      ..	Tang Miar	As in No. 113		

## APPENDIX I—(Contd.)

Sl. No.	Description of persons	Relationship in Gondi		Remarks
		Male speaking	Female speaking	
1	2	3	4	5
118	Male cross-cousin's son's daughter	Tang Miar	Tang Miar	
119	Male cross-cousin's daughter's daughter			
120	Female cross-cousin's son's daughter			
121	Female cross-cousin's daughter's daughter			
122	Son's son's wife .. ..	Koriar (Tammur)	Seriar; Tang Miar	See Nos. 98, 99 and 68
123	Daughter's son's wife .. ..	Tang Miar; Selad	Koriar (Tammur)	
124	Spouse's brother's son's daughter	Tang Miar	Tang Miar; Sarandal	See No. 112
125	Spouse's sister's son's daughter ..	Tang Miar	Tang Miar	

## GADHEṢA-NRIPA-VARNANAM

(A Newly Discovered Sanskrit Manuscript)

BY G. V. BHAVE, M.A., B.T., *Kavya Tirtha*

Two copies of the manuscript of the above title have been discovered at Maṇḍla, one in the house of Pundit Dikshit and the other in that of Mr. Vasudeo Rao Golvilkar, both of them residents of Maṇḍla. In addition to the copy of the MS. I could also find in the stock of Mr. Golvilkar a separate and loose piece of old paper giving the list of all the kings of Gaḍhā-Maṇḍlā with their dates, and also another manuscript named *Gaḍheṣa-Nrīpa-Varṇana-Ślōka-Sangraha* containing poetic descriptions of some kings of the dynasty beginning with Dalpati Shah. These verses are collected from the text of the Ram Nagar Inscription, from that of the ninth sarga of *Gajendra-Mokṣa*, a newly discovered MS. from that of our MS. and also from some hitherto unknown poets. Their names are Vithal Dikshit, Hari Dikshit, Vaidyanāth, Tares and Narhara Mahāpātra, who are decidedly the forefathers of Laxmīprasād, the author of *Gajendra-Mokṣa*. The Golvilkar copy of our MS. of *Gaḍheṣa-Nrīpa-Varṇanam* is possibly the same as has been noticed in Hiralal's *Catalogue of Sanskrit MSS.*, (1926), page 111, but the Dikshit copy is quite a new find. Both the copies have slight variations which I have tried to notice elsewhere in connection with the text which is taken from the Dixit copy. I am thankful to both the gentlemen for kindly lending me their MSS. Enquiries have shown that no copy of our MS. is available in the collection of the University Library, Madras, or even in that of the Bhandarkar Oriental Research Institute, Poona.

### *The Author*

The author of *Gaḍheṣa-Nrīpa-Varṇanam* is one Rūpanātha who gives his name as Maithila Rūpanātha at the end of the work. He was a Maithic Brāhmaṇa and his surname was Ojha. The MSS. are absolutely silent about the date of their composition; therefore no definite information is available as to the exact time of the author. But the present descendant of Rūpanātha, Pandit Bechulal Jha who resides at Maṇḍla, is fifth in succession from the poet, and to this may be added the traditional story that Morāji, the famous *Sardar* of the Saugor Maratha rulers, had met Rūpanātha at Maṇḍla in connection with some religious rites. Now, Morāji died in the year 1796 A.D. soon after the above event, and the last Maṇḍla king,

Sumer Shah, described by Rūpanātha, died in 1789 A.D. Therefore the probable date of the composition of *Gaḍheṣa-Nṛipa-Varṇanam* is between 1789 and 1800 A.D. Starting from his original home, Darbhanga in Bihar, Rūpanātha first went straight to Poona, and, after a short stay there, he is said to have gone on pilgrimage to Hardvar and other places from where he came and settled finally at Maṇḍla on the bank of the river Narmadā. Here he built a *maṭha* and a *ghāt*. The latter is still in quite a good condition and is known as *Bābāghāt*. Besides *Gaḍheṣa-Nṛipa-Varṇanam*, our poet is also said to have composed a bigger poem named *Rāma-Vijaya-Kāvya*. The MS. copy of this work, I am told, was taken to Benares many years ago for publication by a relative of Pandit Bechulal; but the first two *sargas* of it have recently come to my hand in MS. form. Thus research has brought to light at least two Sanskrit poets of Maṇḍla belonging to the 18th century, namely Lakshmīprasād and Rūpanātha and it will be no wonder if time discovers some more names so far unknown to the Sanskrit world.

#### *Literary Merit of the Poem*

As a piece of literary composition the *Gaḍheṣa-Nṛipa-Varṇanam* cannot occupy a very high place among the poetic works of standard Sanskrit-authors. It is inferior even to the freshly discovered work called *Gajendra-Mokṣa*, whether we look at it from the standpoint of style, or of ideas. The flights of imagination that Lakshmīprasāda, the author of *Gajendra-Mokṣa*, indulges in, unhindered and unhampered, and his inexhaustive stock of sweet and yet not too difficult phrases and words are totally absent in *Gaḍheṣa-Nṛipa-Varṇanam*. But this apparent want of a very rich style is to be ascribed to the possible reason that Rūpanātha states what to him are bare historical facts which need not be encumbered by any misleading shrouds of imagination, while Lakshmīprasāda is fully absorbed in an atmosphere of description and praise of persons and things, which allows him full liberty in the matter of the selection of words and ideas.

Lakshmīprasāda may be compared to a tiger who roams at will through the thick jungles of Maṇḍla, while Rūpanātha appears like a sentinel who has to keep his vigil in a fixed direction and to walk up and down in a limited space. Lakshmīprasāda, while writing about Kesari Shah, says,

“कान्त्वा कामोपमानोप्यनुपममुदुताकान्ममानोपमेयो  
दुष्टेभानां विमर्दे स्वरतरनस्वरः केशरीवप्रतापात् ।  
ऐश्वर्यं देवदेवाभिलषितमभिकं दर्शयामासलोके  
पुत्रोन्मथच्छत्रसाहचर्यमुकुटमणिः केशरीसाहिराजा ॥

*Gajendra-Mokṣa*, IX. 8

And about this very king Rūpanātha has nothing more to say than:—

“अभूत्केसरी साहिस्नुस्तदंते प्रकृत्यासुचारुस्त्रिवर्षं महीयान् ।  
महीपालितामेत्य यः स्वर्गसौख्यं समीहांचकारेन्द्रकल्पः कलाव्यः” ॥

Gadhā N. V., 40

This is by way of a specimen. But all this abundantly proves that Rūpanātha has imposed upon himself certain limitations which have left him no scope to go beyond what he originally seems to have intended, viz., the lineage of the Gaḍhā-Manḍlā kings and their dates. Within the limited compass of 54 stanzas he has attempted to deal with more than this number of kings, and when, at the average, even one stanza has not been allotted to one king, the rigidity and the dryness of facts were unavoidable on the part of Rūpanātha.

It is, all the same, not impossible to notice beauty-spots in the *Gadheṣa-Nṛipa-Vaṇṇanam*. The poet has not confined himself to one and the same metre in his composition but has made use of a variety of nearly 10 to 11 different metres, his most favourite metre being Arya. There are 15 stanzas written, in this metre in which, as also in *Śārdūla-vikrīḍita*, the poet is easily at his best. Further, that he has successfully mentioned the period of the reign of each of the long list of the Gaḍhā-Manḍlā kings, not in so many figures but in the traditional technical method of expression, is decidedly a rare literary feat. For instance, for expressing the year 215 instead of using these figures, he has preferred to say “वर्षे बाणैकाक्षियुक्ते” which points out the same because “अक्षि” meaning the eye is a symbol for the number 2, “एक” is one and “बाण” stands for the number 5, and these figures are to run from right to left; therefore the whole expression signifies the number 215. Metaphors like “कुलकमलदिनेश” in st. 29, alliterations like “कमनीयमूर्तिमनिशं कामप्रभं कामुकं” in st. 37, or “प्रजाप्रियः प्रतापवान्” in st. 48 and other familiar figures of speech are easily met with; and the expressions such as “यज्ञकर्ता,” “सुरधाम जगामर्कि,” “प्रजपन् हरिनाम पापहारि,” “जगाम लोकं शशिशेखरस्य,” “प्रपेदे हरिमंदिरं सः” and others of a like nature bespeak the poet's sense of the other-worldliness which, on account of his religious propensities, he could not help expressing even in the midst of hard facts of history, i.e., dates and the genealogy. Thus Rūpanātha has his own remarkable features, and a perusal of the above referred to *Rāma-Vijaya-Kāvya* helps us in concluding that he is otherwise a poet of no mean order.

### The Gonds

Of the four Gond kingdoms, namely, those of Kherla, Deogaḍh, Chāndā and Gaḍhā-Manḍlā, that of Gaḍhā-Manḍlā is the most important from the point whether of the length of duration, of its extent, or of its relations

with other ruling dynasties contemporaneous to it. Nay, even in family intrigues occurring in the 17th and 18th centuries prompted by that monster of greed and selfishness it can easily surpass any other Gond kingdom and can rarely find its equal in other old and now extinct ruling dynasties in India.

The origin of the word Gond has constantly defied and is still defying all researches. Rev. Hislop, Cunningham, Col. Ward, and others have all endeavoured their best but have not been able to arrive at a satisfactory derivation of the word. Whether we analyse the word as Go + und or we connect it to a similarly sounding word Gour, as suggested by these Pandits, we are none the better for it. In the *Āitareya Brāhmaṇa* we meet with the sub-division of Dasyus, a non-aryan tribe of the Vedic times, such as the Paundrās and Puṇindās, which latter class of people we come across even in Bāṇa's *Kādambarī*, a seventh century Sanskrit work. But the word Gond we do not come across in classical Sanskrit literature, nor does Sanskrit lexicography come to our help any way. Consequently, one has no choice left but to conclude for the present that the word has lost its original form altogether.

That the Gonds could occupy a place in History and could make history, is a matter of no small wonder and surprise when we remember that Gonds, before they actually came to rule, had no traditions of a ruling nation at their back. Then, was it the result of a mere accident that the Gonds, an uncultured and wild race, came to assume power and to rule the destinies of a Province for centuries together? It is difficult to answer this question in the affirmative, though enough material is not yet available to enable one to answer it negatively either. But it is possible that the Gonds derived power either as a gift from some previously ruling family, or by usurpation of authority by superior force. This rise of the Gond-power in the Jubbulpore Province is ascribed by C. U. Wills in his *History of the Raj Gonds of C.P.* to the Hinduisation of the Gonds, because they adopted Hindu Gods, Hindu names, Hindu customs and manners, and everything that had a Hindu touch about it. The learned author could have more advantageously said that the Gonds were Brahmanised, or for that matter, Kṣattriyised to rise into eminence. But, when, after examining the point at length, Wills asserts that the late rise of the Gonds was the direct result of their late Hinduisation, it is something which can never appeal even to an ordinary student of human history. The Gonds of the ruling family termed themselves as the Raj Gonds, as apart from other Gonds. But what was the message that they wanted to deliver to other Gonds? Why were not the thousands and

thousands of Gonds of the Maṇḍla region made by them exactly like themselves, socially and culturally? Was their failure in this matter due to their insincerity in their mission of life? Or, had they no mission at all? All these questions can be solved only when some more material about these is discovered.

*Sources of the History of Gaḍhā-Maṇḍlā Gond Rajas*

Unlike many other ruling dynasties the Gond kings of Gaḍhā-Maṇḍlā have left very few records of their own to enable one to write a connected and detailed history of them. There is, of course, the Ram Nagar Sanskrit inscription of the time of Hṛidayashāh, but that does not furnish any date except that when it was put up which is *saṁvat* 1724 being equal to 1667 A.D. Then there are the local traditions and hand-written accounts on which Sleeman and the compilers of the *C.P. Gazetteer*, and Cunningham, and Col. Ward and others have built their own accounts. Hall, in his introduction to Ram Nagar inscription in the *Journal of the American Oriental Society*, Vol. VII, speaks of two Hindi MSS., giving the history of the Gond kings. These MSS. are gone with him. So are also those Sanskrit accounts used by Sleeman and others, so much so that even their names or those of their writers even cannot now be known. Col. Ward in his *Settlement Report of Mandla* (1867) refers to records in possession of Babuji Ojha and Vajpeyis; but those of the latter were destroyed in the 1926 flood, while those in possession of Babuji's son Vallabhji will be fully made use of in connection with the proposed re-editing of the Ram Nagar inscription. Besides all these, there are Muhammadan chronicles such as in *Aini Akbari*, *Akbar Nāma*, and Gulbadan's *Memoirs*. But, as in the case of Shivāji, so also in the case of the Gond kings of Gaḍhā-Maṇḍlā, these accounts have to be used with caution. Names of persons furnished by Muhammadan historians have to be identified; for example, R. B. Hira Lal has successfully proved that Kharji of Abul Fazl was no other than Dadirāya. Similarly Amandas was Saṅgrāmashāh. Abul Fazl's account refers to a period which was 75 years earlier than the date 1667 A.D. of the Ram Nagar inscription. Again, accounts of the Muhammadan historians do not in the least improve our position as to dates except in regard to the attack by Asafkhan on Singorgarh, which has been pointed out to be 1564 (see Smith's *Akbar*, second edition, revised, page 69). The rest is almost dark as regards dates.

*The Founder of the Gaḍhā-Maṇḍlā Dynasty*

All authorities agree as to Yadao Rai being the founder of the family, but there is among them all an irreconcilable variance as to the period, whether exact or probable, in the Indian History when Yadao Rai may



have flourished. Those who have put strong reliance on local traditions fix his start from Sam. 415, while H. H. Wilson is inclined to begin it from 627 A.D. But, by some scholars, *saṃvat* 415 is regarded to be the Chedi *saṃvat* which commences from 249 A.D., and thus a close agreement ( $415 + 249 = 664$ ) with Wilson's 627 A.D. is obtained (vide *Bengal Asiatic Society's Journal*, Vol. VI, 635). But Rai Bahadur Hira Lal, like Hall, Wills and others, regards all kings previous to Madanasimha as merely fictitious names, and determines Madanasimha to be the real founder of the dynasty. Madanasimha flourished in the twelfth century A.D. which was the time of the downfall of the Kalchūris of Tripuri-Jubbulpore. Hall, in his introduction to Ram Nagar Inscription already referred to above, speaks of a copper-plate discovered in Nizam Shah's time, which places Yadao Rai in *saṃvat* 201 equivalent to 144 A.D. This date is very near 154 A.D. given in the *C.P. Gazetteer*. Then there are certain legends about how Yadao Rai came to obtain the kingdom. According to one legend, he obtained it through the blessings of Rāma, Lakshmaṇa and Sītā whom he saw in the jungles of Maṇḍla while in the service of a king there. According to another he got it as a dowry from his second father-in-law who was the last king of the Nāga Dynasty ruling at Jubbulpore. And there are one or two more such which all state that Yadao Rai originally came from the south and our MS. also says that he was a Kachhava of Khandesh. All these stories may be dismissed as being of little use for our purpose here.

#### *Landmarks in the History of the Gaḍhā-Maṇḍlā Kings, Old and New*

The history of the Gaḍhā-Maṇḍlā dynasty will have to be rewritten because these important things about them are not yet finally decided, namely, (1) the founder of the dynasty, (2) the time and period when the dynasty actually rose to power, and (3) the dates of the kings who ruled. And no history is real without dates; or in other words, dates are the very life of history. The most definite dates about Gaḍhā-Maṇḍlā kings so far known to historians are *saṃvat* 1570 = 1513 A.D. found on the gold coin of Saṅgrāma Shah discovered by Hiralal in 1917 A.D.; *saṃvat* 1724 = 1667 A.D. of the Ram Nagar Inscription relating to Hṛdayashah, and *saṃvat* 1799 = 1742 A.D. marking the death of Mahārājshāh on the attack of Maṇḍla by Peshwa Bālāji Bāji Rao. The whole history of the Gaḍhā kings has been till now woven round about these three points. Now, the material that may serve as a further landmark in this connection is:—

- (A) (a) *Samvat* 1815 = 1758 A.D. when the newly discovered MS. *Gajendra-Mokṣa* was presented by the poet Lakshmīprasād to Nizam-shah on the Dasserah day.

- (b) *Samvat* 1769 = 1712 A.D. the date noticed on a MS. of *Rasa-manjarī* of Bhānu Mishra, copied in Narendra Shah's reign.
- (c) The dates given about every one of the long list of the dynasty in our MS. *Gaḍheṣa-Nṛipa-Varṇanam*.
- (d) The dates noticed in another MS. *Gaḍheṣa-Nṛipa-Varṇana-Śloka-Saṅgraha*, which are: (A) 1578 of Vikrama *samvat* = 1521 A.D. the year of Dalpati Shah marrying Durgāvati:—

अब्देष्टाश्वतिथौ युते दलपतिर्निर्मथ्य स्वरोधकात् ।

श्रीचंदेलसुतां जहार बलवान् दुर्गावतीं श्रीमतीम् ॥

- (B) *Samvat* 1586 = 1529 A.D. when perhaps during the regime of Dalpati Shah at Singorgadh, Rohila Umarkhan besieged the fort, as can be understood from the following (verse 3 of the same MS.):—

रसगजतिथियुक्ते हायनेभूद्रदेशो

नृपदलपतिसाहिः सिंहदुर्गेस्थितिर्यत् ।

बलय उमरखानो भूषवावो रुहिल्ला

वरमतिसचिवोस्याधारकायस्थधीरः ॥

(C) The date 1613 possibly *samvat*, corresponding to 1556 A.D. shown just above the second line of śloka 20 in the same MS. referring to the attack by Asafkhan.

We also find in the text mention of the royal seals in the case of some kings:—

Yadao-simha—

श्रीनर्मदावरात्तस्य जनार्दनगुरोः कृपात् (?) ।

यादवसिंहजुदेवस्य चिरं मुद्रास्तु भद्रदा ॥

Saṅgrām-Shah—

श्रीभैरववरात्कार्कतेजसः केशवकृपात् (?) ।

संग्रामसाहेबसुंदर्यं बंधा भूपैः सुखेष्टु(?) (खैबि)भिः ॥

Shiva-simha—

भद्रदा वर्तते भूसौ श्रीकेशवदयोदयात् ।

गुरुदेवप्रसादेन शिवसिंहगढापतेः ।

भद्रा भद्रास्तु सा मुद्रा रौद्रा रौद्राचलाभृतां ॥

### Capitals of the Kingdom

During their whole reign the Gaḍhā-Manḍlā kings adopted some five places as their Capitals, namely, Gaḍhā near Jubbulpore, Singorgarh near Damoh, Chaurā-garh in the old Narsingpur District, Ram Nagar near Manḍlā

and Maṇḍlā itself. Gaḍhā enjoyed the honour of being the Capital quite upto the beginning of the sixteenth century A.D., whereafter the Capital was transferred temporarily to Singorgarh; from Singorgarh the next place of choice was Chourāgarh whence, towards the end of the sixteenth century, Hṛidayashah transferred the head-quarters to Ram Nagar which he built. Ram Nagar hardly enjoyed this honour for a hundred years, whereafter Maṇḍlā was selected for the purpose, and at Maṇḍlā was finished the work of the ruin which had begun with the attack of Asafkhan. Of all these five places traces of old remains warrant that Ram Nagar must have been the most extensive, largely populated and beautiful. But of all these places again, Maṇḍlā, which is nowhere mentioned in any Sanskrit record, is the place that counts even now, the rest being all reduced to ruins. Frequent changes in the Capital were a sure sign of the shaky condition of the kingdom. But the place which to the rulers appeared to be the most out of the way, and therefore safest, helped in their ruin, because they could never recover from the tremendous shock which they had received at the death of Durgāvatī. Therefore it could safely be said that the battle of Singorgarh proved to be the Pāṇipat for the Gaḍhā rulers.

गढेशतृपवर्णनम् ।

(The following is the text of the MS. from the Dīkshīt copy, but its variations with the Golvilkar copy are shown by means of footnotes at the bottom and words marked in the body of the text are explained below.)

श्रीगणेशायनमः ।

या\*(दव)रायो नागवंशप्रतिष्ठः स्वादेशीयः कच्छवाहः स आसीत् ।  
 रामः सीता लक्ष्मणो वायुसुनुर्यस्मै दत्तेस्माथ राज्यं गढायाः ॥ १ ॥  
 रेवोद्भेदादागताय प्रदेशान्मूढन्याका†मन्मुक्तकीरायतस्मै ।  
 पित्रा दत्ते राज्यगोत्रे दुहित्रासाध्वं राजाभूद्गढायामसौसः ॥ २ ॥  
 वर्षे बाणै‡काक्षियुक्तेथमासे राधेपक्षे पाण्डुरे पूर्णिमायां ।  
 मंत्री सर्वे पाठकस्तस्यदक्षः पौरोहित्ये ठक्कुरो भौरवासी ॥ ३ ॥  
 राज्यं कृत्वा पञ्च०वर्षाणि यावत् कृत्वा रक्षां शत्रुतो वै जनानां ।  
 भुक्त्वा भोगानन्तकाले स विष्णोर्लोकं प्राप‡मार्जितं पुण्यजालैः ॥ ४ ॥  
 ततो माधवो भूद्गढायां नरेशस्त्र०यस्त्रिंशदब्दान् प्रकामं महात्मा ।  
 जगन्नाथनामा ततो भूमिपालः शराक्ष्य१ब्दपर्यन्तभोगी बभूव ॥ ५ ॥

\* यादो ।

† कामन् ।

‡ प्राजितम् ।

१ Sāvat 215.

० Thirty-three years.

२ Five years.

३ Twenty-five years.

रघुनाथ आस युगशैल<sup>5</sup>काब्दकान् तत एव रुद्रमुखदेवसंज्ञकः ।  
 वसुनेत्र<sup>6</sup>वर्षमिति राज्यकारको जगतीतले जनमनोहरः किल ॥ ६ ॥  
 एकं च त्रिंश<sup>7</sup>द्वर्षाणि विहारीसिंहभूपतिः ।  
 त्रयस्त्रिंश<sup>8</sup>द्वर्षाणि देवांता<sup>\*</sup>मरसिंहकः ॥ ७ ॥  
 ऊनत्रिंश<sup>9</sup>त्सूर्यभान् राज्यं चक्रे महामतिः ।  
 ततोष्टाद<sup>10</sup>शवर्षाणि वासुदेवो महीपतिः ॥ ८ ॥  
 गोपालसाहिर्नृपतिर्द्विच<sup>11</sup>त्वारिंशदाब्दिकः ।  
 (A)अब्दान् भूपालसाहिश्च गोपीनाथो मुनित्रिभु<sup>12</sup>क् ॥ ९ ॥  
 ततस्त्रयोद<sup>13</sup>शाब्दांश्च रामचन्द्रो महीपतिः ।  
 सुतानसिंहो राजाभूद्वन<sup>14</sup>त्रिंशत्समः क्षिती ॥ १० ॥  
 हरिहरदेवो राजा सप्तद<sup>15</sup>शाब्दान् बभूव किल जगति ।  
 वेदशरा<sup>16</sup>ब्दानधिपस्ततो भवत्कृष्णदेवाख्यः ॥ ११ ॥  
 जगत्सिंहश्च रंघ्रा<sup>17</sup>ब्दान् महासिंहस्त्रिनेत्र<sup>18</sup>भुक् ।  
 दुर्जनमल्लो नवैका<sup>19</sup>ब्दां यथाः कर्णक्षपटत्रिभु<sup>20</sup>क् ॥ १२ ॥  
 प्रतापादित्यराजासीच्चतुर्विंशति<sup>21</sup>वार्षिकः ।  
 चतुर्दशा<sup>22</sup>ब्दिको राजा यशश्चन्द्रो बभूवह ॥ १३ ॥  
 सिंहमनोहर राजाऽनवेदा<sup>23</sup>ब्दिक आस भूमितले ।  
 गोविन्दसिंह ऊर्ध्व शरत्रि<sup>24</sup>वर्ष बभूव नरपालः ॥ १४ ॥  
 शशिनेत्र<sup>25</sup>वर्षभोक्ता तदनुचपो रामचन्द्राख्यः ।  
 रसचन्द्र<sup>26</sup>वर्षभोक्ता कर्णः कर्णहृष संज्ञो ॥ १५ ॥  
 एक<sup>27</sup>व्याब्दिकभोक्ता राजासीद्रत्नसेनाख्यः ।  
 (B)ध्यौवेद<sup>28</sup>वर्षभोक्ता कमलनयनभूमिपश्वासीत् ॥ १६ ॥

\* देवांतमरसिंहकः ।

† नवैकाब्दम् ।

§ नववेदाब्दिकः ।

<sup>5</sup> Seventy-four years.

<sup>6</sup> Twenty-eight years.

<sup>7</sup> Thirty-one years.

<sup>8</sup> Thirty-three years.

<sup>9</sup> Twenty-nine years.

<sup>10</sup> Eighteen years.

<sup>11</sup> Forty-two years.

<sup>12</sup> Thirty-seven years.

<sup>13</sup> Thirteen years.

<sup>14</sup> Twenty-nine years.

<sup>15</sup> Seventeen years.

<sup>16</sup> Fifty-four years.

<sup>17</sup> Nine years.

<sup>18</sup> Twenty-three years.

<sup>19</sup> Nineteen years.

<sup>20</sup> Thirty-six years.

<sup>21</sup> Twenty-four years.

<sup>22</sup> Fourteen years.

<sup>23</sup> Forty-nine years.

<sup>24</sup> Thirty-five years.

<sup>25</sup> Twenty-one years.

<sup>26</sup> Sixteen years.

<sup>27</sup> Thirty-one years.

<sup>28</sup> Forty years.

(A) G. copy shows the figure 60 above this word and I have used the same.

(B) G. copy shows the No. 42, and D. copy shows 40 above this word.

रसनेत्र<sup>29</sup>वर्षभोक्ता नरहरिदेवो बभूव भूपालः ।  
 प्रबभूव वीरसिंहः सप्त<sup>30</sup>ब्दान् वै महीपालः ॥ १७ ॥  
 त्रिभुवनरायस्तदनुवसुत्रि<sup>31</sup>वर्षमितभोगकारीयः ।  
 एका<sup>32</sup>क्षिवर्षभोक्ता पृथ्वीराजः पृथुश्रवा भूपः ॥ १८ ॥  
 भूमौ भारतिचंद्रो नेत्रगुणाब्दा<sup>33</sup>न् बभूव भूपालः ।  
 तस्माच्च मदनसिंहो विंशति<sup>34</sup>वर्षस्य भोक्तासीत् ॥ १९ ॥  
 तदनुप्रसेननामा राजासीत् षट्त्रि<sup>35</sup>वर्षायः ।  
 अथ रामसाहिभूपः खड्ग्याब्दिक<sup>36</sup>वर्षभोक्ता यः ॥ २० ॥  
 देवत्रि<sup>37</sup>वर्ष भोक्ता ताराचंद्रो महीपालः ।  
 आसीच्चोदयसिंहः शरशश<sup>38</sup>धरवर्षभोक्ता यः ॥ २१ ॥  
 राजाथ भानुमित्रो\*रसविधु<sup>39</sup>वर्षस्य भोक्ता यः ।  
 तदनुभवानीदासो नेत्रश<sup>40</sup>शांकाब्दिको भूपः ॥ २२ ॥  
 शिवसिंहनामराजा रसनेत्रा<sup>41</sup>ब्दस्य भोक्तासीत् ।  
 हरिनारायणराजा षड्<sup>42</sup>र्षयो बभूव कोशाढ्यः ॥ २३ ॥  
 आसीच्च सबलसिंहो नवगुण<sup>43</sup>वर्षस्य भोक्तायः ।  
 द्विजरा<sup>44</sup>जवेदवर्ष राजासीद्वाजसिंहाख्यः ॥ २४ ॥  
 दादीरायस्तदनु सप्तत्रिंश<sup>45</sup>त्समाप्तको भूपः ।  
 गोरक्षदासराजा रसवेदा<sup>46</sup>ब्दिकराज्यभोक्ता यः ॥ २५ ॥  
 अर्जुनसिंहमहोर्जुनसदृशः संगरे शूरः ।  
 द्वात्रिंश<sup>47</sup>दब्दभोक्ता राजासात् स्वप्रतापतप्तारिः ॥ २६ ॥  
 संग्रामसाहिस्तनुजोऽस्य जज्ञे संग्रामसंपादितराजचिन्हः ।  
 यो भैरवादासवरो नृपोभूत् खबाण<sup>48</sup>वर्ष परिभोगभोक्ता ॥ २७ ॥  
 प्राकाराग्रैः पर्वतोच्चैः श्रितानि खेयैः पूर्णैर्बौरिभिः सेवितानि ।  
 द्वापंचाशच्छक्तिरे येन राज्ञा भूमीर्जित्वा दुर्गमुख्यानि राज्ञां ॥ २८ ॥

\* रस विधुवर्षस्य भोक्तायः ।

<sup>29</sup> Twenty-six years.

<sup>30</sup> Seven years.

<sup>31</sup> Thirty-eight years.

<sup>32</sup> Twenty-one years.

<sup>33</sup> Thirty-two years.

<sup>34</sup> Twenty years.

<sup>35</sup> Thirty-six years.

<sup>36</sup> Thirty years.

<sup>37</sup> Thirty-three years.

<sup>38</sup> Fifteen years.

† समात्मकोभूपः

<sup>39</sup> Sixteen years.

<sup>40</sup> Twelve years.

<sup>41</sup> Twenty-six years.

<sup>42</sup> Six years.

<sup>43</sup> Thirty-nine years.

<sup>44</sup> Forty-one years.

<sup>45</sup> Thirty-seven years.

<sup>46</sup> Forty-six years.

<sup>47</sup> Thirty-two years.

<sup>48</sup> Fifty years.

अथदलपतिसाहिर्भूमिपो भूमिभोक्ता  
वसुशश<sup>49</sup>धरवर्षं संबभूवारिजेता ।  
विविधविभवयुक्तो यज्ञकर्ता वदान्यः ॥  
कुलकमलदिनेशः कीर्तिजैवातृकेशः ॥ २९ ॥

स्वयंवरं यो गतवान् ससैन्यो नृपा वरा यत्र समागता वै ।  
निजित्यभूपालसमूहमाजौ दुर्गावतीं कामवतीं जहार ॥ ३० ॥

श्रीवीरनारायणनामराजा तदात्मजोभूदिषु<sup>50</sup>चंद्रवर्षं ।  
त्रिवर्षमात्रोऽतिशयं जनन्या सुषुद्धिना मंत्रिवरेण साध्वं ॥ ३१ ॥

ततः पितृव्यो नृपचंद्रसाहिखिनेत्र<sup>51</sup>वर्षं बलवान् स्थविष्ठः ।  
कीर्त्याशशांकेन समः पृथिव्यां प्रतापतो वै दिननायकेन ॥ ३२ ॥

नृपमधुकरसाहिः प्राप राज्यं गढायां  
कलुषमलिनदेहोष्टद्वि<sup>52</sup>वर्षं व्यतीत्य ।  
अ\*दहदनुयुतायां शुष्कबोधैर्षपायां  
त्रिदिविजसुखमाप्सुर्दाहयाम†सदेहम् ॥ ३३ ॥

प्रेमसाहिनृपतिः खलु जज्ञे वैष्णवो विविधधर्मविधाता ।  
व्याधिराधिरभवन्नजनानां यत्र शासति महीमवनीशे ॥ ३४ ॥

यश्चोरागहमेत्य भूमिमनिशं संपालयन् विक्रमै-  
र्यज्ञैर्देवगुणान् सुरेशसहितान् संतोषयन् कामतः ॥  
दानैर्ब्राह्मणशृंदमादरयुतैः संमानयन् सर्वदा ।  
रंघ्रकेन<sup>53</sup> युतं हि वत्सरमसौ राज्यं चकारोप्सितं ॥ ३५ ॥

तत्तनूजहृदयेशमहीशो रामपूर्वजगरे स्थितिमाप ।  
यत्सभा विबुधराजसभासीत् पंडितैर्द्रपरिमंडितमध्या ॥ ३६ ॥

मातंगंश्चणकैकखंडलिखितान् दृष्ट्वा जनौघाः स्फुटं ।  
द्वापंचाशदमंदशिल्पघटितान् यं श्रीहरिं मेनिरे ॥  
नानाशास्त्रविदं कलासु कुशलं स्त्रीसंघमध्यस्थितं ।  
क्रीडन्तं कमनीयमूर्तिमनिशं कामप्रभं कामुकं ॥ ३७ ॥

नयनत्रि<sup>54</sup>वर्षमवनीं स पालयन् विविधं मखं च विदधद्दयान्वितः ।  
सुरलोकभोगमधिकं विचारयन् सुरधामकामवशागो जगाम किं ॥ ३८ ॥

\* अथदलनयुतायाम् ।

† मासदेहम् ।

‡ वाङ्मन्यन्दम

<sup>49</sup> Eighteen years.

<sup>50</sup> Twenty-eight years.

<sup>51</sup> Fifteen years.

<sup>52</sup> Nineteen years.

<sup>53</sup> Twenty-three years.

<sup>54</sup> Thirty-two years.

छत्रसाहिधरणीपतिरासीत् तत्सुतो विविधज\*ज्ञविधाता ।  
 सप्त<sup>55</sup>वर्षमवनीं परिरक्ष्य यो जगाम सुरधाम महीया†न् ॥ ३९ ॥  
 अभूत्केसरीसाहिसूनुस्तदंते प्रकृत्यासुचारुस्त्रि<sup>56</sup>वर्ष महीयान् ।  
 महीपालितामेत्य यः स्वर्गसौख्यं समीहीचकारेन्द्रकल्पः कलाढ्यः ॥ ४० ॥  
 नरेन्द्रसाहिर्नृपतिस्तदंते बभूव राजा पुरुहूतकल्पः ।  
 योबालभावेन गतं हि राज्यं पुनः पुनः स्वं वशमाचकार ॥ ४१ ॥  
 बा<sup>57</sup>णद्विवर्षं परिपाल्यपृथ्वीं पुत्रौ समुत्पाद्य विधाय‡जज्ञान् ।  
 भुक्त्वा च भोगान् विविधान् जगाम सुरालयं सूर्यसमानतेजाः ॥ ४२ ॥  
 नृपालो महाराजसाहिस्तदन्ते सदा संगरं कर्तुंकामोतिक्रोपी ।  
 प्रजापालने दत्तचित्तः सदा यो धनुर्धारणे फाल्गुणेनैव§ तुल्यः ॥ ४३ ॥  
 द्विचंद्र<sup>58</sup>वर्षमादरान्महीं शशासयो युवा ।  
 जगाम रामधाम सद्गुतं रणेन शत्रुहा ॥ ४४ ॥  
 नरपतिशिवराजसाहिरासीदथजनरक्षणलब्धकीर्तिमा||नः ।  
 धरणिगतमिदं स्वधन्यमासीत् यदवनतो धनधान्यसंघपूर्णं ॥ ४५ ॥  
 परिपाल्य सधर्मतो महीं वै ददमानो वसुकांचनं महीं गाः ।  
 प्रजपन् हरिनाम पापहारि गिरि<sup>59</sup>वर्ष हरिलोकमाजगाम ॥ ४६ ॥  
 ततो भवद्दुर्जनसाहिनामा राजातपल्लोकमहर्षिशं यः ।  
 वाग्मा<sup>60</sup>सिकं भोगमलंप्रकुर्वन् जगामलोकं शशिशेखरस्य ॥ ४७ ॥  
 निजामसाहिभूपतिर्बभूवतत्पितृव्यकः ।  
 समस्तकार्यकोविदः प्रजाप्रियः प्रतापवान् ॥ ४८ ॥  
 यः साहिचिन्हं सफलं व्यधत् महाशयः साहसिकोऽप्रमादी ।  
 आखेटकी यंत्रविमोक्षदक्षः कृपाणयुद्धे नकुलेनतुल्यः ॥ ४९ ॥  
 यस्य प्रयाणे गजवाजिर्वृद्धैरुत्थापितो रेणुरन्तमार्गे ।  
 प्रभावमंत्राध्यवसायशफेरतर्द्धावर्कमयूखजालं ॥ ५० ॥

\* Golvilkar copy also gives जज्ञ- It ought to be यज्ञ.

† महीयत् । in this case the word will qualify सुरधाम.

‡ Also occurring in G. copy. It ought to be विधाय यज्ञान्.

§ Also the same in G. copy. The word should be फाल्गुणेनैव.

|| कीर्तिपालः ।

<sup>55</sup> Seven years.

<sup>56</sup> Twelve years.

<sup>58</sup> Three years.

<sup>59</sup> Seven years.

<sup>57</sup> Twenty-five years.

<sup>60</sup> Six months.

वाजपेयिकुलदक्षमंत्रिणा मंत्रयंश्चबुधठक्कुरोदितं ।  
 सर्वकार्यमवधार्यकालवित् सार्द्धषण्ण<sup>61</sup>यनवर्षमात्रतः ॥ ५१ ॥  
 नरहरसाहिमहीपः कृत्वा राज्यं च पंच<sup>62</sup>वर्षाणि ।  
 सततं कुमंत्रिसेवी राज्यभ्रष्टो बभूवाशु ॥ ५२ ॥  
 सुमेदसाहिर्नृपतिर्बभूव भुक्त्वा त्रि<sup>63</sup>वर्षं क्षितिमंडलं तत् ।  
 भ्रष्टो निकामं गतवान् समुद्रं पुनः प्रपेदे हरिमंदिरं सः ॥ ५३ ॥  
 गडापरिचूढा एते तेषां पद्यानि बुद्धितः ।  
 श्रीमता रूपनाथेन रचितानि विचार्य च ॥ ५४ ॥  
 इति श्री मैथिलरूपनाथकृतं गढेशनृपवर्णनं  
 संपूर्णं ॥ शुभमस्तु ॥

*Note.*— In both the copies of the MS. no uniformity has been observed in regard to the use of the letters "ण" and "ऌ".

*Metres:*—1, 2, 3, 4, 28: *Śālinī*; 5, 40, 43: *Bhujāṅgaprayāta*; 6, 38: *Mañjubhāṣiṇī*; 7, 8, 9, 10, 12, 13, 54: *Anuṣṭubh*; 11, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 52: *Āryā*; 27, 42, 47, 50: *Indravajrā*; 29, 33: *Mālinī*; 30, 32, 41, 53: *Upēndravajrā*; 31, 49: *Upajāti*; 34, 36, 39: *Svāgatā*; 35, 37: *Śārdūlvikrīḍita*; 44, 48: *Panchachāmara*; 45: *Puṣpitāgrā*; 46: *Mālbhāriṇī*; 51: *Rathōddhatā*.

### Translation

(As far as possible the translation has been attempted in a most literal form.)

1. Yado Rai of the fame of the Nāga dynasty was a Kachhavāha Rajput of Khandesh, to whom Rāma, Sītā, Lakshmaṇa and Vāyusūnu (Hanumān) gave the kingdom of Gaḍhā.

2. (No happy translation of this stanza is possible, but the reference seems to be directed to the legendary jay or parrot incident. The sense of the whole stanza is that Yado Rai had come from the Nerbudda side, and became the king of Gaḍhā along with his wife whose father was the former ruler of Gaḍhā and who gave his kingdom in dowry to his son-in-law. The wife in this case was Ratnāvalī as per tradition.)

3. (He sat on the throne) on the full-moon day of the bright half of Vaiśākha of the *Samvat* 215. Sarve Pāṭhak was his vigilant minister, and Ṭhakkur, a resident of Bhour, was his priest.

<sup>61</sup> Twenty-six years and six months.

<sup>62</sup> Five years.

<sup>63</sup> Three years.



4. Having ruled for five years, having protected the subjects against the enemies and having enjoyed the comforts he at the time of his death went to the region of Viṣṇu, with his way to it being sprinkled by means of a network of holy deeds.

5. After him Madho became the ruler at Gaḍhā and he of a great soul governed, at pleasure, for thirty-three years; after him came the king by name Jagannāth who ruled for twenty-five years.

6. (After him) ruled Raghunāth for seventy-four years, whereafter came a king named Rudramukhadeo who ruled and charmed, on the surface of the earth, the minds of the people for twenty-eight years.

7. After him (ruled) the king Vihārisimha for thirty-one years and, thereafter, Amarsimhadeva for thirty-three years.

8. (Then) Sūryabhānu of great mind ruled for twenty-nine years, thereafter (ruled) Vāsudeva, the lord of the earth, for eighteen years.

9. (Thereafter) the king Gopala Sāhi ruled for forty-two years, (and) Bhūpala Sāhi, for sixty years, and (then) Gopināth for thirty-seven.

10. Thereafter Rāmchandra, the lord of the earth, ruled for thirteen years, (and) then Surtāna Simha was the ruler on earth for twenty-nine years.

11. (After him) Hari Hardeva remained the king on earth certainly for seventeen years, whereafter ruled the king named Kṛiṣṇadeo for fifty-four years.

12. (Then) Jagatsimha (ruled) for nine years and after him Mahāsimha for twenty-three; (then) Durjanmalla for nineteen years and Yaśahkarṇa for thirty-six.

13. (Then) Pratāpāditya was the king for twenty-four years, while Yaśaschandra (after him) ruled for fourteen years.

14. (Thereafter) the king Manoharasimha was (the ruler) on this earth for forty-nine years, whereafter Govindsimha was the protector of men for thirty-five years.

15. After him the king by name Rāmchandra reigned for twenty-one years, then Karṇa was made the king who was like Karṇa and who ruled for sixteen years.

16. (Then) the king by name Ratnasena ruled for thirty-one years, (after whom) Kamalanayana was the ruler for forty years.

17. (Then) Narharideva became the protector of the earth for twenty-six years, (and after him) Virasimha for seven years.

18. Thereafter (came) Tribhuvana Rai who enjoyed the pleasures of kingship for thirty-eight years; and after him Prithvirāja of great fame was the king for twenty-one years.

19. (After him) Bhārātīchandra became the ruler on earth for thirty-two years, from whom was born Madanasīmha who enjoyed the kingship for twenty years.

20. Thereafter came the king named Ugrasena who ruled for thirty-six years, and after him came the king Rāmasāhi who ruled for thirty years.

21. Thereafter Tārāchandra ruled the earth for thirty-three years, and then came Udayasīmha (after him) who ruled for fifteen years.

22. Then came the king Bhānumitra who enjoyed (the royal throne) for sixteen years, thereafter ruled the king Bhavānīdāsa for twelve years.

23. The king named Shivasīmha (after him) ruled for twenty-six years, and the king Hari Nārāyaṇa rich in treasures, (ruled after him) for six years.

24. Then came Sabalasīmha who ruled for thirty-nine years, (and after him) ruled the king by name Rājasīmha for forty-one years.

25. Then came the king Dādīrāya whose rule came to an end after thirty-seven years, (and he was succeeded by) Gorakṣadāsa who enjoyed the kingdom for forty-six years.

26. The king Arjunasīmha who came to throne after him was in the battle-field like Arjuna and ruled for thirty-two years, being the oppressor of his enemies by means of his prowess.

27. He had a son born (by name) Saṅgrāmasāhi who acquired the royal signs in wars and who having obtained a boon from Bhairava enjoyed the royal pleasures (after his father) for fifty years.

28. By him were built, on lands conquered from kings, fifty-two prominent forts furnished with mountain-high ramparts as also by ditches full of water.

29. Thereafter (came to the throne) the king Dalpatisāhi who ruled over the earth for eighteen years, who was the conqueror of the enemies, and being possessed of various kinds of wealth, who was a performer of sacrifices, was a donor, was the sun for the lotus in the form of (his own) family and surpassed the moon in glory.

30. Who (Dalpatisāhi) accompanied by his army went for the *Swayamvara* where had also assembled the best of the kings; (there) having utterly defeated, in battle, the group of kings he snatched away Durgāvatī full of desire.

31. His son named venerable Vīra Nārāyaṇa aged only three years (ruled) for fifteen years, very well with his mother and the best of the ministers of high intelligence.

32. Thereafter his uncle, King Chandrasāhi, powerful, robust, resembling the moon in fame on earth and the lord of the day, *i.e.*, the sun in prowess, ruled for twenty-three years.

33. (Then) the King Madhukarasāhi obtained the kingdom of Gaḍhā, and with his body made filthy on account of sin, having passed (ruled for) twenty-eight years, burnt his body in the hollow of a dry Pippal tree which had been set on fire, aspiring after the heavenly bliss.

34. (After him) the king Prēmasāhi was really a Vaiṣṇava, the doer of various religious deeds, during whose reign the people did not suffer from bodily diseases and mental worries.

35. Who having come to Chaurāgaḍha very well protected constantly the land by means of his deeds of prowess, and pleased by means of sacrifices the multitudes of Gods including (Indra) the Lord of all gods, with all desire, and always honoured multitudes of Brahmins by means of gifts made respectfully; he ruled for nineteen years according to his desire.

36. His son Hridayeśa, the Lord of Earth, settled in the town of Rama Nagar, whose court-assembly was like that of the Lord of Gods adorned by the best of the learned men.

37. Having seen fifty-two elephants carved out, with a steady workmanship, on a single piece of a gram, the multitudes of people regarded him as Sṛīhari—him who was versed in various sciences, was expert in (all) arts, would always stay amidst crowds of women, was given to sports, had a handsome person, would always look like the god of love and was always lustful.

38. He, full of kindness, having protected the earth for thirty-two years and having performed various sacrifices, departed to the region of Gods, as if being overpowered by passions he regarded the pleasures obtainable there to be of a superior type.

39. His son was the king Chattrasāhi, the performer of a variety of sacrifices, who, a great king, went to the heavenly regions after having protected the earth for seven years.

40. After his demise, his son Kesarisāhi, charming by disposition and a great soul, was the king for three years, who having protected the earth and being like Indra, a store of arts, aspired after the heavenly happiness.

41. After his death the King Narendrasāhi became the ruler like Indra, who brought his kingdom back frequently under his subjection, the kingdom which was placed under dispute on account of his childhood.

42. Having very well protected the earth for twenty-five years, having procreated two sons, having performed sacrifices and having enjoyed various (royal pleasures) he, possessed of a lustre like that of the sun, went to the abode of gods.

43. After his death came the King Mahārājsāhi who was always desirous of carrying on wars was of a very hot temper and who, with a constant devotion to the protection of his subjects, was equal to Arjuna in the use of the bow.

44. Who, a young man, ruled, with care, the earth for twelve years, (and) went to the abode of Rām very soon, being the killer of his enemies by means of (his prowess in) the battle-field.

45. After him the King Shivarājsāhi acquired fame by his protection of his subjects, on account of whose protection this surface of the earth full of the stores of wealth and corn felt itself blessed.

46. Having protected for seven years nicely the earth according to religious dictates and making gifts of wealth, gold, land and cows, and muttering the sin-destroying name of Hari, he approached the region of Hari.

47. Thereafter (came to throne) the king named Durjanasāhi who, having constantly oppressed the world and having enjoyed the pleasures (of kingship) for six months, departed to the region of Śiva.

48. (After him) ruled the King Nijāmasāhi his uncle, (who was) well versed in all deeds, popular among the subjects and valorous.

49. Who being of a noble object, courageous and faultless, fond of chase, expert in the use of machines, being like Nakula in sword-fight, fruitfully held the signs of a Sāhi.

50. At the time of whose departure the dust, raised, in his endless path, by the hoofs of the multitudes of elephants and horses eclipsed by force of his prowess, counsel and firm determination, the multitude of the rays of the sun.

51. Always taking his decision in all matters after discussing the opinions of the wise Thakkur with the clever minister (born) of the Vājapēyi family, he who knew (the full implication) of the times, (departed to the other world) after the reign of only twenty-six years and six months.

52. (After him) the King Narharasāhi having ruled for five years, being always guided by vicious ministers, was at once deprived of his kingdom.

53. (Thereafter) Sumerasāhi became the king who after enjoying the kingship of that circle of earth for three years was totally deprived (of the throne) and going to the sea, he again reached the abode of Hari.

54. 'These are all the Lords of Gaḍhā. The verses in honour of them were composed, thoughtfully, by the venerable Rūpanātha after great consideration.

Thus ends the *Gaḍheṣa-Nṛipa-Vaṇṇanam* (the description of the kings, the rulers of Gaḍhā). May it prove auspicious.

**APPENDIX**  
**Genealogy of the Gond Kings of Gadhd-Mandla**

Name of the King	Gadhesa-Nripa-Yarnanam				Sleeman		Remarks
	Year of accession Vikram Samvat	Corresponding year of the Christian era	Dura- tion of rule in years	Year of accession in terms of the Christian era A.D.	Dura- tion of rule in years		
1. Yadao Rai .. ..	215	158	5	382	5	Sleeman calls him Narsimhadeo	
2. Madho .. ..	220	163	33	387	33		
3. Jagannāth .. ..	253	196	25	420	25		
4. Raghunāth .. ..	278	221	74	445	64		
5. Rudramukhdeo .. ..	352	295	28	509	28		
6. Vibārisimha .. ..	380	323	31	537	31		
7. Amarsimha .. ..	411	354	33	548	33		
8. Sūryabhānu .. ..	444	387	29	601	29		
9. Vasudeo .. ..	473	416	18	630	18		
10. Gopālsāhi .. ..	491	434	42	648	21		
11. Bhupālsāhi .. ..	533	476	60	669	10		
12. Gopināth .. ..	593	536	37	679	47		
13. Rāmachandra .. ..	630	573	13	726	3		
14. Surtānasimha .. ..	643	586	29	729	29		
15. Hari Hardeva .. ..	672	615	17	758	17		

16. Kṛishnadeo	..	689	632	54	775	14
17. Jagatsiṅha	..	743	686	9	789	9
18. Mahāsīṅha	..	752	695	23	798	23
19. Durjannalla	..	775	718	19	821	19
20. Yaśahkarpa	..	794	737	36	840	36
21. Pratāpāditya	..	830	773	24	876	24
22. Yaśaschandra	..	854	797	14	900	14
23. Manoharasīṅha	..	868	811	49	914	29
24. Govindsīṅha	..	917	860	35	943	25
25. Rāmachandra	..	952	895	21	968	21
26. Karpa ..	..	973	916	16	989	37
27. Ratnagena	..	989	932	31	..	..
28. Kamalanayana	..	1020	963	42	1026	6
29. Narharideva	..	1062	1005	26	1032	7
30. Virasīṅha ..	..	1088	1031	7	1039	26
31. Tribhuvana Rai	..	1095	1038	38	1065	28
32. Prithvirāja	..	1133	1076	21	1093	21
33. Bhāraticandra	..	1154	1097	32	1114	2
34. Madanasīṅha	..	1186	1129	20	1116	40
35. Ugrasena ..	..	1206	1149	36	1156	36
36. Rāmasāhi ..	..	1242	1185	30	1192	24
37. Tārachandra	..	1272	1215	33	1216	34

Slceman wrongly regards  
Karpa and Ratnasena  
as being one person  
under name Karnotha-  
ratnasena

## Genealogy of the Gond Kings of Gadhā-Mandlā—(Contd.)

Name of the King	Gadhega-Nripa-Varnanam				Sleman		Remarks
	Year of accession Vikram Śatvāt	Corresponding year of the Christian era A.D.	Dura- tion of rule in years	Year of accession in terms of the Christian era A.D.	Dura- tion of rule in years		
38. Udayasinha .. ..	1305	1248	15	1250	15		
39. Bhānumitra .. ..	1320	1263	16	1265	16		
40. Bhavānidāsa .. .. *Raghupatisimhaparihar	1336 ..	1279 ..	12 ..	1281 ..	12 ..		
41. Śivasinha .. ..	1348	1291	26	1293	26		
42. Hari Nārāyaṇa .. ..	1374	1317	6	1319	6		
43. Sabalasinha .. ..	1380	1323	39	1325	29		
44. Rājasinha .. ..	1419	1362	41	1354	31		
45. Dādīrāya .. ..	1460	1403	37	1385	37		
46. Gorakshadāsa .. ..	1497	1440	46	1422	26		
47. Arjunasinha .. ..	1543	1486	32	1448	32		
48. Sangrāmasāhi .. ..	1575	1518	50	1480	50		
49. Dalpatisāhi .. ..	1625	1568	18	1530	18		
50. Vīra Nārāyaṇa .. .. *Sūryasinha Pahada	1643 ..	1586 ..	15 ..	1548 ..	15 ..		
51. Chandrasāhi .. ..	1638	1601	23	1563	12		

52. Madhukasāhi	..	..	1681	1624	28	1575	24
53. Prema Narayan	..	..	1709	1652	19	1599	11
*Jujharsinha	..	..	..	..	..	..	..
54. Hridayasāhi	..	..	1728	1671	32	1610	71
55. Chattrasāhi	..	..	1760	1703	7	1681	7
56. Kesarisāhi	..	..	1767	1710	3	1688	3
57. Narendrasāhi	..	..	1770	1713	25	1691	40
58. Maharajsāhi	..	..	1795	1738	12	1731	11
59. Shivarajsāhi	..	..	1807	1750	7	1742	7
60. Durjanasāhi	..	..	1814	1757	4	1749	2
61. Nijamasāhi	..	..	1814½	1757½	26½	1751	27
62. Narharasāhi	..	..	1841	1784	5	1778	3
63. Sumerasāhi	..	..	1846	1789	3	1781	..
	..	..	1849	1792	..	..	..

\* Found only in Golvilkar List.

*Note.*—A very remarkable thing in the above list is that most of the names are sanskritised, with such solitary exceptions as Dādirāya and Nijāmasāhi, and another that many of them are nearly the same as those of the Bundela dynasty of Panna. And examples in the latter case are Bhāratūchandra, Rānchandra, Prithvirāja, Karṇa and others.



## KHULĀSATUL AKHBĀR OR "THE QUINTESSENCE OF HISTORIES"

BY GHULĀM MUŠTĀFA KHĀN, M.A., LL.B.

(King Edward College, Amraoti)

FROM Professor E. G. Browne we know that the history "*Khulāṣaṭu'l-Akḥbār*", or "The Quintessence of Histories" was written in 905/1409–1500<sup>1</sup> by *Khawāndamīr*,<sup>2</sup> the writer of "*Ḥabību's-Siyar*", etc., and the grandson (daughter's son) of *Mīrkhwānd*<sup>3</sup>, the famous writer of "*Rauḍaṭu's-Ṣafā*". Professor Sa'īd Naṣīrī of Persia also gives the same date, with an additional information that it was begun in 904/1408.<sup>4</sup> But if we just go through this manuscript history we understand that either these scholars could not get its complete copies<sup>5</sup> or that they did not pay greater attention to its contents. Anyway, this is a fact, to be proved here, that although the "*Khulāṣaṭu'l-Akḥbār*" was begun in 904/1408, it surely continued to a *much later* date than 905/1409–1500, as said by the above scholars, *i.e.*, upto 930/1524, like the author's another but more popular history "*Ḥabību's-Siyar*". But before proceeding to discuss the same, I would like to say something about the book itself and its contents. The manuscript copy which is with me opens with these lines of florid and figurative style:—

(درق ۱) برترین گوهرے کہ تابدارانِ کشورِ فصاحت و تحت نشینانِ خطبہ  
بلاغت را پیرایہ افتخار باشد حمد و ثناءے یگانہ ایست کہ مرت عالم جلوہ گاہ  
بدایع قدرتِ اوست و وحدت کدہ بیدار دلاں آگاہ خاص ترین خلوتِ ادا  
تصویرِ صورتِ کائنات بر صفحہ امکان از خانہ ابد آتش آرایشے است والوان  
صنایع بر لوحِ اکوان از کار گاہ اصطعاش نمایشے . . . . .

<sup>1</sup> Prof. Browne—"Persian Literature under Tartar Dominion," p. 434.

<sup>2</sup> *Khawāndamīr*, *Khwāndmīr* or *Khūndmīr* was his title. His name was *Ghiyāthu'd-Dīn b. Humāmu'd-Dīn b. Jalālu'd-Dīn b. Bu'rḥānu'd-Dīn Muḥammad* of Shīrāz (see *Ḥabību's-siyar*, Bombay, 1857, p. 2 ; and the Introduction to *Ḍaṣṭūru'l-Wuzarā*, Tehran, 1317, p. 1.)

<sup>3</sup> *Mīrkhwānd* or *Amīrkhwānd*. His name was *Muḥammad b. Bu'rḥānu'd-Dīn Khawīnd Shāh b. Shāh Kamālu'd-Dīn Mahmūd* of Balkh. (See the Introduction to *Ḍaṣṭūru'l-Wuzarā*, p. 1.)

<sup>4</sup> His Introduction to *Ḍaṣṭūru'l-Wuzarā*, p. 5.

<sup>5</sup> Its manuscript copies are in the libraries of Bankipore, Deoband, Panjab University, British Museum, etc. The Bankipore MS. is probably the oldest—dated 966/1558.

..... نعتِ برگزیده ایست که صلائے دعوتش بہ برد بخیرہاں  
رسیدہ و جواہر ہدایتش در رشتہ جانِ پاکان کشیدہ و نسیم صبح سر بہ  
صحرا نہادہ، گیسوئے عنبریں بوسے دوست و گلِ سوری شعلہ بدل افتادہ رو  
و لجوئے او..... و جواہر صلاّتِ زاکیہ بہ آلِ اجماد وابستہ

امّا بعد - بر ضمیرِ این حقیر گزشتہ کہ احوالِ پیشینان و دقایع و سوانح  
عالمِ بنی آدم کہ از مبادی از من رشتہ ہمارہ عمر عزیز را بمطالعہ کتبِ تواریخ  
و اخبار مصروف می داشت و پیوستہ نظر بر صحایفِ حالاتِ سلف و لطایفِ  
روایاتِ خلف می گماشت و چون فی الجملہ وقوف بر اخبار و اوضاعِ عالم دست  
نواد و اندک اطلاعی بر کیفیتِ سلوکِ طوایفِ ائمّ اتفاق افتاد اجیاناً در مجلس  
عالی مقداری..... ( درق عا ب ) نظام الحق و الحقیقت

والدین امیر علی شیر خدا اللہ تعالیٰ لالہ ظلال معالیہ -----

..... بعضی از غرایب حکایات را بروجہ القامی کرد کہ بہ  
شرفِ استحضارِ اقران می یافت و انوارِ عنایتِ آں حضرت بروجناتِ احوال  
ایں شکستہ بال می یافت و روز بروز ایں صورت از وضاحتِ از دیاد می گرفت  
و ساعت بہ ساعت ایں حالتِ صفتِ استحکال می پذیرفت. ( درق عا ۱ )  
تا در حال نہ صد و چہار از ہجرتِ بنی مختار صلی اللہ علیہ وسلم.....

کتاب ہائے مشتمل بر فنِ تاریخ و اخبار در کتب خانہ معمورہ آں بزرگوار موجود و  
تسلیم ایں بے بضاعت نمود و بمطالعہ آنہا ترغیب تحریر فرمودند و من بعد  
بندہ چون براں مصنفات فصاحت آیات گزشتہ و باخیاں فواید موثرہ . . . .  
مخطوط دہرہ و گزشتہ ایں ہوس در سہ و ایں اندیشہ در خاطر پیدا شد کہ . . . .  
بعبارات روشن و اشارات مستحسن خلاصہ آں فواید را در سلک بیان  
جمع آرم و چون ایں خیال را بعرض آں نقطہ دایرہ فضل و کمال رسانیدم۔ بقدر  
قبول و رضا مقرون شد۔ رخصت انشاء ایں نامہ نامی یافتہ۔ و بجز تمام و جہد  
لاکلام از پئے ترتیب ایں نسخہ گرامی شتافتہ۔ و بنا بر آں کہ ایں مختصر بر خلاصہ نجاب  
اخیار مشتمل بود مرشد عقل آں را خلاصہ الاخبار فی بیان الاحوال الاخیار  
نام نہاد۔ و بیان حکایات و شرح روایاتش در ضمن مقدمہ و ذہ مقالہ خاتمہ  
اتفاق افتاد بدین تفصیل کہ مذکور می گردد۔ مقدمہ۔ در ذکر اول چیزے کہ  
خلعت خلعت پوشیدہ و بیان آنحضرت صلی اللہ علیہ و آلہ و سلم را  
آفرید و کیفیت سلوک جان . . . . و حکومت البیس در میان ایشان۔ مقالہ  
اول۔ در ذکر انبیاء و مرسلین صلوٰۃ اللہ علیہم اجمعین۔ مقالہ دوم۔ در ذکر  
حکماء رحمہم اللہ المؤمنین منہم۔ مقالہ سوم۔ در ذکر ملوک عجم و سلاطین و اتقدم  
مقالہ چہارم۔ در ذکر حالات و غزوات و خواجه کائنات و خلاصہ موجودات علیہ  
افضل الصلوات و اکمل التحیات۔ مقالہ پنجم۔ در ذکر خلفاء راشدین (دوق  
عاب) و ائمہ اثنی عشر رضوان اللہ علیہم اجمعین۔ مقالہ ششم۔ در ذکر خلفاء  
بنی امیہ۔ مقالہ ہفتم۔ در ذکر خلفاء عباسیہ۔ مقالہ ہشتم۔ در ذکر  
طبقات سلاطین کہ بعضے معاصر عباسیاں و بعضے بعد از ایشان بودہ اند۔ مقالہ  
نہم۔ در ذکر فرزندان یافت بن نوح علیہا السلام و بیان خروج چنگیز خان و سلطنت  
اولاد او در اطراف جہان و اقطار۔ مقالہ دہم۔ در ذکر فرماے و کشور کشای  
بادشاہ ظفر قرین صاحب قراں امیر تیمور گورکان و بیان سلطنت اولاد آں شہریار  
گیتی ستاں تا ایں زمان و خاتمہ۔

From the above lines the following new points are noticed even at the first glance:—

(1) The writer, after the 'praise' of God, the Holy Prophet and of the latter's pious family, says that from the very beginning of his matured age (like Mirkhwānḍ)<sup>6</sup> he was always busy with the study of history.

(2) The writer's patron Nizāmu'd-Dīn Amīr 'Alī Shīr Nawā'ī of Herat? (844/1440—the 12th of Jamādā II, 906/January 3, 1501) had a great liking for histories. In A.H. 904 (= A.D. 1499) this patron gave our writer *several histories* of his personal library for study, and then allowed him to write a concise but precise history, namely, "*Khulāṣat ul-Akḥbār*" or the "Quintessence of Histories".

(3) The arrangement of the different chapters of this history, as quoted in the above passage, is quite different from that of the "*Rauḍat ul-Ṣafā*".<sup>8</sup> It may be called, as Professor Browne says, "*in essence an abridgement*" of the latter,<sup>9</sup> but this is a fact that the writer had, before him, several other histories also, when he wrote it. The view of Professor Browne, about its abridgement, will be correct only if we think, like him, that (a) the facts of the "*Khulāṣat ul-Akḥbār*" are limited upto the year 873/1468-9, when the sixth volume of the "*Rauḍat ul-Ṣafā*" was completed, and that (b) the former was written in 905/1499-1500. But both these points are refuted when we just have a glance at the "Appendix", which was completed upto the year 930/1524 and based upon the author's personal knowledge of the current period. Naturally the importance of this "Appendix", as also in the "*Ḥabību's-Siyar*", supersedes that of the *seventh* volume of the "*Rauḍat ul-Ṣafā*",<sup>10</sup> which was also written by this author and is, as Professor Browne says, "*wholly devoted to the life and reign of his patron Abu'l-Ghazī Su'lṭān Ḥusayn, who died in 912/1506-7.*"<sup>11</sup> But even this view is not exactly correct, because we find, in the seventh volume, several other facts also, which go beyond the year 912/1506-7 and are limited at

<sup>6</sup> For Mirkhwānḍ's eager taste for history, see *Rauḍat ul-Ṣafā*, Lucknow, 1874, Vol. I, p. 3.

<sup>7</sup> To his credit see "Persian Literature under Tartar Dominion," pp. 505-506.

<sup>8</sup> *Ibid.*, pp. 432-33, for the arrangement of the chapters of the latter history.

<sup>9</sup> *Ibid.*, p. 434. The Hameediya Library of Bhopal contains a good abridgement, dated Shawwāl 11, 1079-Thursdays, March 4, 1669.

<sup>10</sup> Its Lucknow edition, published in 1874, contains the seventh book also, whose eighth line (p. 1360) missed the word "Nawāḍa" (daughter's son) from before the name "Muḥammad b. Khāwīnḍ Shāh". Unfortunately, there is no copy of this seventh book at Bankipore, although there are several copies of its other volumes in that library. The Cama Library of Bombay contains the seventh book but its preface, which could contain the said name of the author, is missing.

<sup>11</sup> Professor Browne's 3rd Volume, p. 433.

least upto the year 929/1523, as the author "*Khwānd-mīr*" himself says, in connection with the descendants of his patron Su'ltān Husain Bayqarā, as follows:—

در ذکر کیفیت حال و مال میرزا بدیع الزماں و انتقال او از جهان پُر ملال در شهر  
اسلام پُل و خروج میرزا محمد زماں و لد او در جرجان. از رشحاتِ سحابِ قلم  
و حرکاتِ بنائے ستوده رُتَم سابقاً بوضوح پیوست که چون خاقان منصور علم عزیمت  
بصوب عالمِ آخرت برافراشت هفت پسر نیک اختیاریدگار گذاشت . . . . .  
و ابو المنصور مظفر حسین گورکاں و راستر آبا و نَوُت گشت چنانچه گزشت و او یک نذر  
داشت مسامه مہرا نگیرد یکم - ہم در اں ایام کہ محمد خاں ہرات را فتح کرد و بجایالہ بنجارج عبید  
اللہ سلطان درآمد و چون یک دو سال باوے بسر برد من الجانین بمقارقت  
اتفاق افتاده روے بخراساں آورده - حالاکہ تاریخ ہجری سنہ تسع و عشرين و  
تعمادہ رسیدہ این ستورہ بے آنکہ در تحت امر وہنی شوہری شود در بعضے از بلاد  
عراق روزگاری گزرايند . . . . .<sup>12</sup>

So from the above passage it is quite clear that *Khwāndmīr* continued the seventh book<sup>13</sup> at least upto the year 929/1523 and not upto 912/1506-7 only.

#### *The Date of the Completion of the "Khulāṣaṭu'l-Akḥbār"*

Now, in order to remove doubts about (a) the contents and (b) the date of the completion of the "*Khulāṣaṭu'l-Akḥbār*", I give here some important quotations from the manuscript. On folio 404 b, just before the "*Appendix*" the following passage occurs:—

<sup>12</sup> Seventh book, Lucknow Edition, p. 1456.

<sup>13</sup> Besides the seventh book of this history (in the Cama Library of Bombay) and Ḥabību's-Siyar (Vol. III, Pt. III, p. 339), this manuscript also contains, on folio 391a and b, five times the word "Abawī" (=my father)—an expression applied by this author to his maternal grandfather Mirkhwānd. In the *Catalogus of Mulla Firoz Library*, Bombay, p. 81 and in Sir H. Elliot's *History of India*, Vol. II, p. 431, the former has been called the son and nephew of the latter respectively. The latter view requires some clarification in future.

..... برائے انور و ضمیر ضیاء گستر بار باب فضل و ہنر پوشیدہ نہ ماند کہ این نامہ نامی  
و صحیفہ گرامی را در اندک زمانے از کتب مبصرہ جمع آورد و آنچه در خیر قدرت این بے  
بضاعت عظیم الاستطاعت بود در تصحیح و تفحص سعی و اجتہاد کرد خلاصۃ الاخبار  
را بعبارتے کہ در باو کی الرائے روے وارو در سلب بیان کشیدم و از ایراد الفاظ  
غیر مانوس الاستماع و امن در چیدم اما عالم السّر و الخفیّات آگاہ است کہ اگر نہ یمن عتقا  
و حسن اہتمام عالی حضرت خداوندگارے ہدایت شعارے بوے آنچه قرب شش ماہ  
نوشته شد در مدت شش سال با تمام رسیدے .....

This passage shows the following points:—

(1) From the second line it is evident that the author consulted several books when he wrote this history, and not only the "Rauḍaṭu'ṣ-Ṣafā". Hence it is not its abridgement alone, as Professor Browne thinks.

(2) The last line shows that the writer took about six months to complete his history upto the above passage (and before the "Appendix"). We have already seen in the opening lines of this manuscript that the author had begun it in 904/1499. Hence it is now clear that this history, upto the above passage only, was completed by the beginning of 905/1499. This further clarifies my view, as shown at the beginning of this essay, that Professor Browne and Professor Sa'īd Nafīsī of Persia had either seen only the incomplete copies of this history (i.e., only upto the above passage and not the "Appendix") or that they did not pay greater attention to its contents.

Now we see that important "Appendix" of this history, which thus begins on folio 405 a of my copy:—

در بیان مال مال طایفہ آق قویلو کہ<sup>14</sup> . . . . . بعد از فرقہ قراقویلو کہ در آرد  
بجانب و عراقین و فارس و کرمان بمرتبہ بلند سلطنت رسیدہ اندہ اگرچہ بیان احوال  
ایشان را در حادثہ و واقعہ سلطان سعید سلطان ابو سعید میرزا ذکر کردن اولی و نہب  
بود اما چون ایشان نیز بادتشایان عظیم الشان و رفیع المکان بودہ اند مناسب و دیگر از  
روح پرفورج استادان استدا و نمودہ مجملے در آخر این کتاب ثبت نماید . . . . .

<sup>14</sup> In this passage I have kept, in tact, the spelling of the names of these two tribes, but in the following translation I have adopted Professor Browne's transliteration (see his 3rd Volume).

<sup>15</sup> On folio 382b of this MS. and on page 411 of the *Daṣṭūr ul-Wuzarā* the author calls Maulānā Mu'īnu'd-Dīn Isfārī and Maulānā Jāmī, respectively, as his "ma'ḥḍūmī" (= my master).

"— Account of the tribe Āq-Qoyūnlū ("White Sheep" Turkmān dynasty) that ruled over Adharbayjān, 'Irāq, Fārs, Kirmān, etc., after the tribe Qāra-Qoyūnlū ("Black Sheep" Turkmāns, whose rule ended in A.D. 1468). Although it would have been appropriate to give their account along with that of the auspicious king Abū Sa'īd (died in A.D. 1468), but as they, too, had been great kings I thought it advisable to write it (separately and) briefly (seeking help from the 'blessed' souls of my masters) *at the end of this book.*"

These accounts continue till on folio 421 *a* we find the date of the birth of Shāh Tahmāsp as the morning of Wednesday, the 26th of Dhil-ḥajj, A.H. 919 (= the 28th of January, A.D. 1514). From folio 423 *b* begins the account of this king (better styled as Abu'l Muẓaffar Shāh Tahmāsp Bahādu'r Khān Ṣafawī) who ruled over Persia after his father Sulaimān's death on Monday<sup>16</sup>, the 15th of Rajab, A.H. 930 (= the 19th of May, A.D. 1524.) This account then ends with the history on folio 424 *b*, and gives us *at least* the date 930/1524, which corrects the views of Professor Browne and Professor Sa'īd about its completion.

By this time our historian Khwāndmīr completed three other books, *i.e.*, Ḍaṣṭūru'l-Wuzarā, Ma'āthiru'l-Mulūk and Ḥabību's-Siyar. In 931/1525 he wrote his fifth book "Āthāru'l-Muluk-wal-Anbiyā"; and in 934/1528 he came (from Herat) to India, where he was again busy in writing his sixth book "Humāyūn-Nāma". By the end of the year 942/1535 he died at the age of sixty-two and was buried, according to his wish, near the tomb of the famous Saint Nizāmu'd-Dīn Auliya in Delhi.<sup>17</sup>

<sup>16</sup> The corresponding day of the Christian calendar is Thursday and not Monday.

<sup>17</sup> For these details see the *Introduction of the Ḍaṣṭūru'l-Wuzarā*, pp. 3-6.

## APPENDIX

### List of References to Research Work Published by the Teaching Staff connected with the Nagapur University

#### AGRICULTURAL SCIENCES

- ANNETT, H. E., "Losses and gains of nitrogen in an Indian soil studied in relation to the seasonal composition of well waters and the bearings of the results on the alleged deterioration of soil fertility," *Memoirs, Department of Agriculture, India*, Chemical Series, 1928, 9. It has been seen that only during the rains does nitrification normally take place in the Central Provinces soils which are under cotton or *juar*. If however the land is cropped with a cold weather crop, it receives sufficient cultivation, and then such soil accumulates large amounts of nitrates in the surface 6" and lesser quantity in the next 6".
- IYER, A. R. P., AND  
KAYASTHA, R. N.
- BAL, D. V. .. "The determination of Nitrogen in heavy clay soils," *Jour. Agri. Science*, 1925, 15. A modified Kjeldahl method for the determination of Nitrogen in soils has been suggested.
- " .. "Studies on carbon-dioxide production in soils and solution," *Annals of Applied Biology*, 1926, 13. The rate of carbon-dioxide production by *B. prodigiosus* from various sugars has been studied and an account of experiments conducted with a view to finding out the factor or factors responsible in lowering the carbon-dioxide production in soils and solution is given.
- " .. "The effect of varying concentrations of ammonia on the nitrifying power of the soil," *Agri. Jour. India*, 1927, 22. From the results obtained, it is seen that concentration upto 60 m.g. of ammoniacal nitrogen per 100 gms. of soil does not materially affect the process of nitrification, but concentrations of over 100 m.gs. of ammoniacal nitrogen are definitely injurious to the process of soil nitrification.
- " .. "A common error in the method of total Nitrogen estimation in soils and its bearings on the results of nitrogen fixation experiments," *Proceedings, First International Congress, Soil Science*, 1927, 3. Importance of taking into consideration the important factor of the method of nitrogen determination while formulating any conclusions regarding the work on nitrogen fixation in soils in general and heavy soils in particular has been emphasised.
- " .. "Some aspects of black cotton soils of the Central Provinces," *Empire Journal of Experimental Agriculture*, 1935, 3. A brief account of the chemical and biological aspects of black cotton soils has been given.
- " .. "An investigation into the effect of green manuring, alone and in combination with phosphatic fertilisers, on the yield of phosphatic content of paddy," *Nagpur University Journal*, 1936, 2. Application of nitrogen alone reduces the percentage of  $P_2O_5$  in the seed but the same is increased by applications of phosphatic fertilisers in conjunction with nitrogen.



- BAL, D. V. .. "A study of the fluctuations in organic nitrogen content of black cotton soil under varying conditions of cropping," *Proceedings, National Institute of Science, India*, 1937, 3. It has been observed that organic nitrogen in black cotton soil, under varying conditions of cropping, fluctuates very considerably from time to time. Growing wheat annually for a period of 9 years did not show any deterioration in soil organic nitrogen, and growing a mixture of wheat and legumes annually did not show any significant increase.
- BAL, D. V., AND  
ATHAWALE, C. R. "An investigation into the effect of manuring and stage of maturity on the yield and manurial composition of pasture grass and their bearing on the manurial requirement of the cattle of the Central Provinces," *Nagpur University Journal*, 1935, 1. It was found that grass cut at monthly intervals is somewhat richer in  $P_2O_5$  than that cut at the flowering stage, and the latter is somewhat richer than that cut at the dead ripe stage, but such a difference in respect of calcium content of the grass is not noticeable to any appreciable extent. The manurial content of the grass does not appear to be affected in any way by the various manurial treatments employed.
- BAL, D. V., AND  
MISRA, R. N. "Some aspects of the growth of rice in heavy black soils of the Central Provinces," *Agriculture and Live-Stock, India*, 1932, 2. Experiments on the growth of rice in sand cultures have shown that the rice plants prefer a slightly acidic or neutral medium to alkaline one. In the case of heavy soils, sulphur together with a basal dressing of green manure gives increased out-turn but applications of superphosphate either alone or in combination with sulphur give decidedly better results.
- BAL, D. V., AND  
MISRA, S. K. "A study of the effect of different types of rations on the quality of milk, milk yield and the general condition of milch buffaloes," *Proc. Ind. Acad. Sci.*, 1939, 9. It was observed that inclusion of cotton seed in the ration fed to milch buffalo does not show any particular advantage over a ration consisting of groundnut cake and *juar* meal, in so far as the general health and individual weights of the animals, and of the calves at birth, and average daily milk yields and their fat content are concerned.
- BHATIA, G. S. "A new variety of *Khapli Emmer* wheat from India and its bearing upon the place of origin of *Emmer* Wheats," *Journal of Genetics*, Feb. 1938, 35, No. 3.
- " "Cytology of some Indian Wheats," *Annals of Botany*, New Series, April, 1938, 2, No. 6.
- " .. "An Octoploid Amphidiploid  $F_1$  Hybrid from *Triticum vulgare* var. *Graecum* KCKE  $\times$  *T. Dicoccum Indicum*," *Journal of Genetics*, Feb. 1938, 35, No. 3.
- DASTUR, J. F. .. "The Mosaic Disease of Sugarcane in India," *Agri. Jour. India*, 1923, 18, Pt. V.
- " .. "A Preliminary Account of the Investigation of Cotton Wilt in Central Provinces and Berar," *ibid.*, 1924, 19, Pt. III.
- " .. "A Mosaic-like Disease of Sugarcane in the Central Provinces," *ibid.*, 1926, 21, Pt. VI.

- DASTUR, J. F. .. "A Short Note on the Foot-rot Disease of Pan in the Central Provinces," *Agri. Jour. India*, 1927, 21, Pt. II.
- " .. "Cotton Wilt," *Mem. Dep. Agri. India, Bot. Ser.*, 1929, 18, No. 3.
- " .. "A Short Note on the work done on the Foot-rot disease of Pan at Ramtek," *Departmental Publication*, 1929.
- " .. "A Short Note on the diseases of Cotton seedlings in the Central Provinces," *Agri. Live-Stock, India*, 1931, 1, Pt. I.
- " .. "Control of the Foot-rot Disease of Pan (*Piper Betel*) in the Central Provinces," *ibid.*, 1931, 1, Pt. I.
- " .. "Potato Storage in the Central Provinces," *ibid.*, 1931, 1, Pt. IV.
- " .. "Foot-rot and 'Black Point' Disease of Wheat in the Central Provinces," *ibid.*, 1932, 2, Pt. III.
- " .. "Sugarcane Mosaic," *International Society of Sugarcane Technologists Fourth Congress, Puerto Rico*, 1932, Bull. 24.
- " .. "A Short Note on the Control of *Striga* spp. on Sugarcane in C. P.," *ibid.*, 1932, Bull. 25.
- " .. "Cotton Anthracnose in the Central Provinces," *Ind. Jour. Agri. Sci.*, 1934, 4, Pt. I.
- " .. "Microscopic Characters of the 'Black Point' Disease of Wheat in the Central Provinces," *World's Grain Exhibition and Conference, Regina, Canada*, 1935.
- " .. "A Dry Method of Treating jowar seed with copper carbonate as a preventive against smut," *Departmental Publication*, 1935.
- " .. "Diseases of Pan (*Piper Betel*) in the Central Provinces," *Proc. Ind. Acad. Sci.* 1935, 1, No. 2.
- " .. "Gram-Wilts in the Central Provinces," *Agri. Live-Stock, India*, 1935, 5, Pt. VI.
- " .. "A Nematode Disease of Rice in the Central Provinces," *Proc. Ind. Acad. Sci.*, 1935, 4, No. 2.
- " .. "A Hand-book of Plant Diseases of Economic Importance in the Central Provinces," *Departmental Publication*, 1937.
- " .. "Pan-sukh Disease of Rice in the Central Provinces," *Agri. Live-Stock, India*, 1937, 7, Pt. IV.
- " .. "Stem Breaking of Cotton," *ibid.*, 1940, 9, Pt. 6.
- " .. "A New Corticium on Orange Stem," *Ind. Jour. Agri. Sci.*, 1940, 10, Pt. I.
- DASTUR, J. F., AND JIWAN SINGH .. "A New Nematospore on Cotton Bolls in the Central Provinces," *Annales Mycologici*, 1930, 28, Nos. 31/4.
- KALAMKAR, R. J., AND DHANNALAL .. "Sample studies in Cotton varietal Trial," *Sankhya* (the Indian Journal of Statistics), March 1940, 4, Pt. IV.
- VAIDYA, V. G. .. "The seasonal cycles of Ash, carbohydrate and nitrogenous constituents in the terminal shoots of Apple trees and the effects of five vegetatively propagated rootstocks on them," *Journal of Pomology and Horticultural Science*, June 1938, 16, No. 2.

- (WALLACE, T., AND) "Total ash and ash constituents, a Field Experiment on the manuring of Strawberries," *ibid.*, June 1938, 16, No. 2.
- (WRATH, F. J., AND) "Experiments on the Feeding of Sorghum Silage and concentrate of Scindi Calves," *Memoir of the Department of Agriculture in India*, Chemical Series, August 1927, 9, No. 5.

## BOTANY

- NIRULA, R. L. . . "Saltations in Bacteria," *Annals of Botany*, April 1928, 42, No. 166. A study of the saltations in Bacteria—that appeared as sectorial invagination in bacterial colonies. The work threw a considerable light on the taxonomic characters of Bacteria.
- .. "Contributions towards our knowledge of the Indian Algæ. I. Studies in the Algal Flora of Nagpur," *Proceedings of the 18th Indian Science Congress*, 1931. The important algal organisms occurring in Nagpur are described. Some of the ecological associations are mentioned and an account is given of a form of Scytonemataceæ combining the characters of Scytonema and Tolypothrix.
- .. "A Bacterial Disease of Betel Vine leaves," *ibid.*, 1931. The organism attacks the leaves during storage, the disease appearing as a water-soaked area generally beginning from the cut end of the petiole and working inwards. The organism appears as pale yellow in colonies.
- NIRULA, R. L., AND "Contributions towards our knowledge of the Indian Algæ. II. Systematic and Morphological studies in *Spirogyra*," *ibid.*, 1931. A systematic study of *Spirogyra*. Some species were not typically aquatic and were found on moist soil. A number of forms showed organs of attachment. In some specimens as many as six filaments conjugated together.
- NIRULA, R. L., AND "Some interesting Observations on *Notothylas*," *ibid.*, 1932. This was a new species in which the spirogonia were generally marginal but in some specimens, they were quite as frequently dorsal. The special cells along the margin of each valve formed a single row. There was no columella. The special interesting features were that the capsules were frequently exerted and sometimes even dehiscent along one or both sutures.
- NIRULA, R. L., AND "A New Species of *Spirogyra* from Nagpur," *ibid.*, 1932. The breadth of the filaments was very narrow and the species reproduced by lateral conjugation.
- (PAINE, S. G., AND) "A Disease of Swedes and Turnips," *The Annals of Applied Biology*, NIRULA, R. L. Feb. 1928, 15, No. 1. A new disease of the turnips due to a bacterial organism.
- SHUKLA, V. B. . . "On a new Species of *Dadoxylon*, *D. Deccani* sp. nov., from the Deccan Interrappean Series," *Jour. Ind. Bot. Soc.*, 1938, 17, Nos. 5 and 6.
- VARADPANDE, K. V. "On a species of *Equisetum* from Kolhar River, Nagpur," *Proceedings of the 18th Indian Science Congress, Nagpur*, 1931.
- (INAMDAR, R. S., AND) "Studies in respiration of Tropical Plants—II," *The Journal of the Indian Botanical Society*, Nov. 1929, 8, No. 3. This paper contains the study of the glucose effect on the permeability of cell membranes to diffusion of sugar molecules as noted by the intensity of Respiration when leaves were injected with varying concentrations of glucose solutions.

## CHEMISTRY

CHAKRAVARTI, D. N. "Influence of Concentration on Viscosity of Colloids," *Nagpur University Journal*, Dec. 1936, No. 2.

GORE V. (AND DHAR) "The change of viscosity of sols and of precipitating concentrations of electrolytes with their purity and the change of the Ratio of precipitating concentration with the temperature of coagulation," *J. Indian Chem. Soc.*, 1929, 6, 64.

GORE, V. .. "The formation of sugars in mixtures of Tartaric acid and aldehydes in Tropical Sunlight," *J. Phy. Chem.*, 1933, 37, 745. Sugar formation has been detected in mixtures of Tartaric acid and aldehydes or alcohols.

.. "Photosynthesis of Formaldehyde in Tropical Sunlight," *ibid.*, 1935, 39, 399. The experiments carried out revealed that the photo reduction of  $\text{CO}_2$  to Formaldehyde is facilitated by the presence of hydrogen in a nascent state, the nascent state of  $\text{CO}_2$  being another condition.

.. "Leisgangische Ringe in nicht gelartengen Medien Teil, I," *Kolloid L.*, 1936, 76, 193.

.. "Leisgangische Ringe in nicht gelartengen Medien Teil, II," *ibid.*, 1936, 76, 330.

.. "Leisgangische Ringe in nicht gelartengen Medien Teil, III," *ibid.*, 1938, 82, 79.

.. "Leisgangische Ringe in nicht gelartengen Medien Teil, IV," *ibid.*, 1938, 84, 203.

The freshly precipitated inorganic salts were peptised with different concentrations of several electrolytes. The peptoids thus obtained were covered with other electrolytes.

All these experiments show ring formations. Clear rings were obtained wherein the media used as reactants were phosphates of Fe, Al, Cr, Ca and Ba, hydroxides of Fe, Al, Cr and Zn, borates of Ca and Ba, silicates of Al and Ca. These substances are well known for their colloidal tendencies.

That the Leisegang phenomenon is a phenomena of periodic coagulation is the only explanation to account for these structures. A coagulation theory which takes into account the released dispersion medium is outlined in the papers.

(DHAR AND) GORE V. "The change of Precipitating Concentration of electrolytes with the purity and temperature of some hydroxide sols," *J. Indian Chem. Soc.*, 1929, 6, 31.

KAPPANNA, A. N. "Ionisation potential of Hydrogen Fluorides," *ibid.*, 1926, 3.

.. "The kinetics of intra-molecular Transformation  $\text{NH}_4\text{CNS} \rightleftharpoons \text{CS}(\text{NH}_2)_2$ ," *ibid.*, 1927, 4.

.. "The rôle of phosphates in the oxidation of glucose," *ibid.*, 1928, 5.

.. "Kinetic Salt effect—Part I," *ibid.*, 1928, 5. Reaction between Monochloroacetate and thiosulphate ions.

.. "Kinetic Salt effect—Part II," *ibid.*, 1929, 5. Velocities of ionic reactions at great dilutions.

- KAPPANNA, A. N. "Kinetic Salt effect—Part III," *ibid.*, 1929, 6. Influence of non-electrolytes on salt effect in ionic reactions.
- " .. "Die Kinetik der Torsetzung von Trichloressigsäure in Wasserigen Lösungen," *Zeitschrift für Physikalische Chemie*, 1932, Bd. 158.
- " .. "Kinetics of the reaction between c-Brompropionate and silver ions," *Proceedings of the Indian Academy of Sciences*, 1935, 2 (A). A heterogeneous reaction taking place on the surface of silver bromide.
- " .. "Mechanism of the reaction between chloral hydrate and sodium hydroxide," *Proceedings of the Indian Science Congress*, 1937.
- (GHOSH, J. C., AND) "Electro Deposition of Antimony," *Journal of Physical Chemistry*, Feb. 1924, 28.
- KAPPANNA, A. N. "The Decomposition of Potassium manganioxalate in ordinary plane polarised and circularly polarised light," *Journal of Indian Chemical Society*, 1926, 3.
- KAPPANNA, A. N. "Kinetic salt effect in Methyl alcohol solutions," *ibid.*, 1931, 8. The reaction AND PATWARDHAN, between sodium methoxide and Sodium Bromacetate.
- H. W. "Kinetics of Inversion of sucrose—A study," *ibid.*, 1931, 8.
- " .. "Kinetics of the reaction between thiosulphate and Bromoacetate ions at great dilutions and at different temperatures," *ibid.*, 1932, 9.
- " .. "Die Kinetik der zersetzung der Trichloressigsäure, II," *Zeitschrift für Physikalische Chemie*, 1933, Bd. 166. Der mechanism der zersetzung der saure in Anilin lösungen.
- KRISHNAMURTI, K. "On silicic acid gels," *Proceedings of Indian Assoc. for Cultivation of Science*, June 1926.
- " .. "Mechanism of swelling of gels," *Nature*, Feb. 1929.
- " .. "Scattering of light in colloidal sols and gels," *ibid.*, Nov. 1929.
- " .. "Scattering of light in sols and gels," *Proceedings of Royal Society, A*, 1929, 122.
- " .. "Scattering of light in protein solutions," *ibid.*, 1930, A, 129.
- " .. "Mechanism of swelling of gels," *Journal of Indian Chemical Society* 1933.
- " .. "Formula for variation of scattering of light in colloids during slow coagulation," *Current Science*, Dec. 1933, 2, No. 6.
- " .. "State of water in gels," *ibid.*, 1934.
- " .. "Determination of E/M for colloidal particles," *ibid.*, Sept. 1934.
- " .. "Effect of Magnetic Field on electrolytic conductors," *ibid.*, May 1935, 3.
- (DONNAN, F. G., "Scattering of Light in Colloidal Solutions and Gels," *Colloid Symposium AND) K. KRISHNA- Annual*, 1929.
- A URTI
- KRISHNAMURTI, K. "Scattering of light in sodium silicate solutions," *Transactions of Faraday (AND L. L. Society*, Oct. 1930, 26.
- BURGESS)

KRISHNAMURTI, K., "Mechanism of coagulation of colloids," *Current Science*, 1934.  
AND KULKARNI,  
B. S.

KRISHNAMURTI, K. "Ultracentrifugal study of gelatin solutions," *Journal of American Chemical Society*, 1930, 52.  
(AND SVEDBERG, T.)

### ECONOMICS

DADACHANJI, B. E. *A Reserve Bank for India and the Money Market* (Butterworth & Co.). It explains the science and practice of Central Banking and their application to India, as well as the structure of the Central Bank that should suit India best.

NANAVATI, M. H. "Equity in Distribution and Interest of Capital," *Indian Journal of Economics*, April 1939, 19, Pt. IV.

SETH, H. C. "Agricultural Credit," *ibid.*, 1928, 8, Pt. 3. This paper discusses the nature of the credit requirements of the agriculturists and suggests the lines on which the co-operative credit movement in India should develop to meet these requirements.

" "National Wealth of India," *ibid.*, 1931. The various estimates of the national wealth of India are critically examined. Some new suggestions are made for the estimates of *per capita* income for India.

" "The Law of Population and the Law of Produce," *Nagpur University Journal*, 1936, 2. Critically examines the assumptions underlying the Malthusian theory of population.

" "Biological theories of Population," *ibid.*, 1937, 3. The various biological theories of population are critically examined.

" "A Dynamic Theory of Population," *ibid.*, 1938, 4. It examines population question in relation to social dynamics, and suggests a new approach to this important question.

" "The Control of Population," *ibid.*, 1939, 5. Discusses the problems arising out of the control of population in relation to social dynamics.

" "Interest, Wages and Profit Sharing," *Indian Journal of Economics*, 1939, 19, Pt. IV. Suggests a new basis for the distribution of profits.

### ENGLISH LITERATURE AND LANGUAGE

MEHTA, B. H. "Greek Myth and Tragedy," *Nagpur University Journal*, Dec. 1936, 2. The paper deals with Nietzsches' contention, in his *Birth of Tragedy*, that the "ruin of the tragedy was at the same time ruin of the myth". The author's conclusion is that it was "the ruin of myth" which brought about the ruin of Æschylian tragedy.

" "Byronic Satire," *ibid.*, Dec. 1937, 3. It emphasises the importance of the study of Byronic Satire for the student of social and political history of the period. "The Age of Bronze", the most neglected but superb satire of Byron, is analysed along with the other satires.

" "Swinburne the Republican," *ibid.*, Dec. 1939, 5. It deals with "Songs before Sunrise only". The approach is not "literary" but "political". It claims to reveal for the first time reasons for the conspiracy of silence or of detraction adopted by traditional criticism regarding the poems. A plea for the popularisation of the "Songs before Sunrise."

## HINDI LITERATURE AND LANGUAGE

DUBE, H. D. .. "One aspect of Jaya Shankar Prasad," *Nagpur University Journal*, Dec. 1938, No. 4.

.. "Prasad as a Subjective Idealist," *ibid.*, Dec. 1939, No. 5. •

## HISTORY, ARCHÆOLOGY, EPIGRAPHY AND NUMISMATICS

HUNTER, G. R. .. "Interim Report on an Excavation in the Mahadeo Hills," *Nagpur University Journal*, Dec. 1935, No. 1.

.. "Final Report on the Excavation in the Mahadeo Hills," *ibid.*, Dec. 1936, No. 2.

KATARF, S. L. .. "The Rise of the Hoysalas," *ibid.*, Dec. 1938, No. 4.

.. "The Rise of the Hoysalas," *ibid.*, Dec. 1939, No. 5.

MIRASHI, V. V. .. "Yuvarājadeva I of Tripuri," *Annals of the Bhandarkar Oriental Research Institute*, 1930, 11, 361 ff. This article discusses the main events in the reign of Yuvarājadeva I, the Kalachuri Emperor of Tripuri.

.. "Two Inscriptions from Berar," *Epigraphia Indica*, 1931, 21, 127 ff. The stone inscriptions at Amḍāpur and Bīrsi Ṭākli are edited, with introductory articles on their historical importance.

.. "Did Tailapa II defeat a Chedi King?" *Indian Historical Quarterly*, 1933, 9, 132 ff. The current view that Tailapa II defeated a Chedi king, which is based on the statements of R. G. Bhandarkar, Fleet and Hiralal is shown to be due to the misinterpretation of a verse in Yewur grant of Vikramāditya VI.

.. "Historical Data in Rājasekhara's *Viddhaśālabhañjikā*," *Indian Antiquary*, 1933, 62. This drama of Rājasekhara is shown to be based on an historical incident in the reign of Yuvarājadeva I.

.. "Historical Data in Padmagupta's *Navasahasāṅkacharita*," *ibid.*, 1933, 63, 101 ff. This drama of Padmagupta describes a campaign of the Paramāra King Sindhurāja of Malwa, which was directed against the contemporary king of Chhattisgarh and also Sindhurāja's marriage with a Nāga princess from Bastar.

.. "Further Light on Rāmagupta," *ibid.*, 1933, 62, 201 ff. A verse in Rājasekhara's *Kavyamīmāṃsā* institutes a comparison between Rāmagupta and Mahipāla and thus shows that Rāmagupta was defeated by the contemporary Kushān king somewhere in the Himalayas.

.. "Thakurdiya Plates of Mahī Pravararāja," *Epigraphia Indica*, 1933, 22, 15 ff. These plates found in Chhattisgarh are edited and the chronological limits of the age of the so-called kings of Śarabhapura are determined.

.. "Khamkhed Plates of the Time of Pratāpaśīla," *ibid.*, 1933, 22, 15 ff. These plates have brought to light a hitherto unknown dynasty which flourished in Berar in the eighth century A.D.

.. *Kālidāsa* (a book in Marathi), 1934. A comprehensive work treating of the date, life and works of Kālidāsa.

- MIRASHI, V. V. .. "Chandragupta II—Vikramāditya and Govinda IV," *Indian Historical Quarterly*, 1934, 10, 48 ff. The historical importance of a verse in the Cambay and Sāngli plates of Govinda IV is pointed out. New light is shed on the incident in the life of Chandragupta II, described in the *Devichandragupta*.
- .. .. "The Chronological Order of Rājasekhara's Works," *K. B. Pathak Commemoration Volume*, 1934. Rājasekhara's works are shown to have been composed in the following order—*Bālarāmāyaṇa*, *Bālābhārata*, *Karpūramāñjarī*, *Viddhaśālabhañjika* and *Kāvyamīmāṃsā*.
- .. .. "Sarkhon Plates of Ratnadeva II," *Epigraphia Indica*, 1934, 22, 159 ff. A copper-plate grant of the Kalachuri king Ratnadeva II of Ratanpur, dated Kalachuri year 880 (A.D. 1128), is edited.
- .. .. "Tiroḍi Plates of Pravarasena II," *ibid.*, 1934, 22, 167 ff. These plates found at Tiroḍi in the Bālāghāt District record a grant of the Vākāṭaka King, Pravarasena II which he made in the twenty-third regnal year.
- .. .. "An unfinished Vākāṭaka Plate from Drug," *ibid.*, 1934, 22, 207 ff. This plate found at Mohalla in the Drug District was intended to be issued from Padmapura which was then the Vākāṭaka capital. The inscription was, for some reason, not completed.
- .. .. "The Birth-place of Bhavabhūti," *Indian Historical Quarterly*, 1935, 11, 287 ff. Padampur near Amgaon in the Bhaṇḍārā District is shown to have been the birth-place of Bhavabhūti, a well-known Sanskrit dramatist.
- .. .. "Epigraphic Notes," *Nagpur University Journal*, 1935, No. 1, 1 ff. Places mentioned in the Siwani plates of the Vākāṭaka Pravarasena II and the Deoli plates of the Rāshtrakūṭa Kṛishṇa III are identified.
- .. .. "Pendrabandh Plates of Pratāpamalla," *Epigraphia Indica*, 1935, 23, 1 ff. These plates found in Chhattisgarh have brought to light a new Kalachuri king named Pratāpamalla who ruled at Ratanpur. They are dated A.D. 1214.
- .. .. "Paṭṭan Plates of Pravarasena II," *ibid.*, 1935, 23, 81 ff. These plates of the Vākāṭaka Pravarasena II record the grant of some land in Aśvatthakheṭaka (modern Paṭṭan in the Betul District). They are dated in the twenty-seventh regnal year.
- .. .. "Epigraphic Notes, No. II," *Nagpur University Journal*, 1936, No. 2, 48. The places mentioned in the Patna Museum plates of Pravarasena II, the Rajim plates of Tivaradeva, the Benares and Goharwa plates of Karṇa are identified.
- .. .. "A Note on the Dates of Uchchakalpa Kings," *Epigraphia Indica*, 1936, 23, 171 ff. The dates of the Uchchakalpa kings are shown to belong to the Gupta era.
- .. .. "Two copper-plate inscriptions from Berar," *ibid.*, 1936, 23, 204 ff. These inscriptions of Govinda III, dated A.D. 807 and 812, record the King's grants of villages in Berar to a Brāhmaṇa.
- .. .. "Kārlitalai Stone Inscription of Lakshmaṇarāja," *ibid.*, 1936, 23, 256 ff. This inscription from the Jubbulpur District mentions Lakshmaṇarāja, one of the early Kalachuri kings of Tripuri. It is dated A.D. 841-42.



- MIRASHI, V. V. . . "Localities mentioned in the Mundkhede Plates of Jayaśakti," *Quarterly Journal of the Bhārata Itihāsa Samśodhaka Maṇḍala*, 1936, 17, 52 ff. These places have been shown to be situated in the Khandesh District of the Bombay Presidency.
- " . . "Pauni Stone Inscription of the Bhāra king Bhagadatta," *Epigraphia Indica*, 1937, 24, 11 ff. This inscription records the dedication of a slab marked with foot-prints by Bhagadatta of the Bhāra clan. The inscription is probably of the first century A.D.
- " . . *The Date of Tivaradeva : Ganganath Jha Volume*, 1937. Tivaradeva is shown to have lived in the beginning of the sixth century A.D.
- " . . "An Odd Copper-plate of the Vākāṭaka king Pravarasena II," *Nagpur University Journal*, 1937, No. 3. This plate found at Mansar near Ramtek is edited and the similarities in technical expressions occurring in the Vākāṭaka and Pallava grants are pointed out.
- " . . "Epigraphic Notes, No. III," *ibid.*, 1937, No. 3. Some passages in the Jubbulpur plates of Yaśaḥkarna and the Rewah stone inscription of Malayasinha are examined and new interpretations of them are proposed.
- " . . "A new copper-plate inscription from the Central Provinces," *Quarterly Journal of the Bhārata Itihāsa Samśodhaka Maṇḍala*, 1937, 18. This inscription has brought to light a new royal family which ruled over the Wardha District in the time of the later Yādavas of Devagiri.
- " . . "New Light on Deotek Inscriptions," *Transactions of the Eighth All-India Conference*, 1938, 613 ff. Of the two inscriptions inscribed on a slab at Deotek in the Chanda District, one is shown to be a record of the time of Aśoka and the other of the Vākāṭaka Rudrasena I.
- " . . "Places mentioned in the Abhone and Vaḍner Plates of Kalachuri Kings," *Quarterly Journal of the Bhārata Itihāsa Samśodhaka Maṇḍala*, 1938, 19, 56 ff. The places mentioned in these are shown to be situated in the Nasik District and in H. E. H. Nizam's Dominions.
- " . . "Rewah Stone Inscription of the Time of Karna," *Epigraphia Indica*, 1938, 24, 101 ff. This inscription is dated A.D. 1048-49. It gives valuable new information about the conquests of Karna and about some members of the Kāyastha family who served the Kalachuri kings as their ministers.
- " . . *Ibid.*, 1938, 24, 116 ff. Several recently discovered dates of the Kalachuri era are examined and it is shown that the Kalachuri year began on Karttika śudi 1.
- " . . "A note on the Prince of Wales Museum Plates of Jayabhaṭa," *ibid.*, 1939, 24, 176 ff. It is shown that the Gurjara king Jayabhaṭa who issued the plates was the fourth king of that name and not the third as supposed by the Editor of the inscription.
- " . . "Two Incomplete Grants of Pravarasena II," *ibid.*, 1939, 24, 260 ff. The copper-plates found at Belorā in the Wardha District record two grants of villages, both of them incomplete, by the Vākāṭaka Pravarasena II.
- " . . "Kāman Stone Inscription," *ibid.*, 1939, 24, 329. This inscription found at Kāman in the Bharatpur State gives interesting information about trade-guilds in the 9th century A.D.

- MIRASHI, V. V. .. "Vāmadeva, an Early Kalachuri King," *F. W. Thomas Volume*, 1939. From a stone inscription at Saugor it is shown that Vāmadeva or Vāma-rajā was the founder of the Tripurī branch of the Kalachuris.
- " .. "Gold Coins of Three Kings of the Nala Dynasty," *Journal of the Numismatic Society*, 1939, No. 1. The gold coins of three Nala kings, Varāha, Bhavadatta and Arthapati found in the Bastar State are described.
- MIRASHI, V. V., AND DIKSHIT, M. G. "An incomplete grant of Sinda Ādityavarman," *Epigraphia Indica*, 1940, 25, 164. This inscription brings to notice a new dynasty of Sinda kings who ruled in the Poona District in the 10th century A.D.
- " .. "New Light on the Mediæval History of Gujarat," *D. R. Bhandarkar Volume*, 1940. This article shows why Jayasīrha-Dharāśraya was appointed by the Chālukya Vikramāditya I to supersede the Sendrakas in Gujarat.
- " .. "An Ancient Dynasty of Mahakosala," *Proceedings of the Indian History Congress*, 1940, 319 ff. From an inscription in the temple Pāli in the Bilāspur District it is shown that the country was held by the Bāṇa kings who were in course of time supplanted by the Kalachuris.
- " .. "Tarhaḷa Hoard of Śātavāhana Coins," *Journal of the Numismatic Society of India*, 1940, No. 2, 83 ff. This hoard which contained more than 1,500 coins has brought to light the names of several Śātavāhana kings who ruled in the Central Provinces and Berar in the early centuries of the Christian era.
- " .. "Places mentioned in the Paiṭhan Plates of Rāmachandra," *Quarterly Journal of the Bhārata Itihāsa Saṁśodhaka Maṇḍala*, 1940, 21, 12. Most of the places mentioned in these plates are shown to be situated in Khandesh.
- MIRASHI, V. V., AND KULKARNI, L. R. "Anjanvalī Plates of Govinda III," *Epigraphia Indica*, 1935, 23, 8 ff. These plates of the Rāshtrakūṭa king Govinda III record the grant of Anjanavanti in the Amraoti District. They are dated A.D. 800.
- " .. "Rāmték stone inscription of the time of Rāmachandra," *ibid.*, 1940, 25, 7 ff. The inscription is edited and the kings Simhana, Jaitrapāla and Rāmachandra mentioned in it are shown to have belonged to the later Yādava Dynasty of Devagiri.
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- SETH, H. C. .. "Origin of Pāli," *Nagpur University Journal*, 1936, No. 2. The paper tries to account for the influence of Western dialects in Pāli.
- " .. "Did Candragupta Maurya belong to North-Western India?," *Annals of the Bhandarkar Oriental Research Institute*, 1937, 18, Pt II. The question of the parentage and the origin of Candragupta Maurya is examined. It is suggested that Candragupta did not belong to the Nanda family nor did he belong to Magadha. He originally came from Gandhāra and was perhaps identical with Śaśigupta.
- " .. "Candragupta and Śaśigupta," *Indian Historical Quarterly*, June 1937, 13, Pt. 2. The probability of Śaśigupta being identical with Candragupta Maurya is suggested.

- SETH, H. C. .. "Central Asiatic Provinces of the Mauryan Empire," *ibid.*, Sept. 1937, 13, Pt. 3. Evidence is brought together to show that the whole of modern Afghanistan, parts of eastern Persia, the Central Asiatic highlands and parts of Chinese Turkestan formed part of the empire of Candragupta and Aśoka.
- .. "Inscriptional Evidence of Candragupta Maurya's Achievements," *Journal of Indian History*, August 1937, 16, Pt. 2. The question of the identification of the emperor Candra of the Meharauli iron pillar inscription is examined, and it is suggested that Candra of the iron pillar inscription may be Candragupta Maurya.
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- .. "Vṛiṣala the Greek Kingly Title of Candragupta," *Indian Historical Quarterly*, Dec. 1937, 13, No. 4. It is suggested that the term Vṛiṣala is not used by Cāṇakya for Candragupta in the drama *Mudrārākṣasa* in any bad sense. It is perhaps a kingly title and may be the Sanskritised form of 'Basilus' the Greek word for king.
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- .. "Sidelights on Cāṇakya the Great Chancellor," *New Indian Antiquary*, July 1938, 1, No. 4. The paper throws new light on the character and achievements of Cāṇakya, the Great Chancellor of Candragupta Maurya.
- .. "Chronology of Aśokan Inscriptions," *Journal of Indian History*, Dec. 1938, 17, Pt. 3. A new chronology of Aśokan inscriptions in terms of his own regnal years is attempted. It is shown that the Major Rock Edicts were the earliest of the Aśokan inscriptions, then came the Pillar inscriptions, and last came the Minor Rock Edicts.
- .. "Buddha Nirvāṇa and some other Dates in Ancient Indian Chronology," *Indian Culture*, 1939, 5, No. 3. The case for 487 B.C. being the date of Buddha Nirvāṇa is carefully examined. New arguments have been given for this date.
- .. "Kingdom of Khoṭan (Chinese Turkestan) under the Mauryas," *Indian Historical Quarterly*, September 1939, 15, No. 3.
- .. "Note on Vṛiṣala as the Greek Kingly Title," *ibid.*, September 1939, 15, No. 3.
- .. "Candragupta Maurya and the Meharauli Iron Pillar Inscription," *New Indian Antiquary*, December 1939, 11, 9. Otto Stein's objections to my suggestion that Candra of the Meharauli iron pillar inscription may be identical with Candragupta Maurya are examined in this paper.
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- .. "Identification of Udayana of Kauśāmbi with Udayin of Magadha," *Annals of the Bhandarkar Oriental Research Institute*, 1939-40, 21, Parts I-II.
- .. "Sidelights on Aśoka, the Great," *ibid.*, 1940, 20, Pt. II. Some new light is thrown on the character and achievements of Aśoka.
- .. "Gandhāra Origin of Candragupta Maurya and his identification with Śaśigupta," *Journal of the U. P. Historical Society*, Dec. 1940, 13, 2, p. 74 ff. The paper re-examines the whole of the question of the ancestry and origin of Candragupta Maurya.
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## MATHEMATICS

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### PERSIAN LITERATURE AND LANGUAGE

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- .. "Existence and Experience," *ibid.*, Third Session, 1927, 1928. It is wrong to identify the content of experience with the object of experience and it is equally wrong to say that knowledge is of Appearance and not of Reality. There is no 'that' which has no 'what' and there is no 'what' which is not of a 'that'.
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PRĀKRIT AND APABRĀHṢA, LITERATURE AND LANGUAGES

- JAIN, H. L. .. "जैन साहित्य में हिन्दीकी जड़," मनोरमा, 1924, 1, No. 4. Early Apabhrāṃśa compositions have been cited and attention is drawn to their bearing on the origin of Hindi.
- " .. "महाकवि पुष्पदन्तके समय पर बिचार," जैन साहित्य संशोधक, 1924, 2, No. 3. The date of the greatest poet of Apabhrāṃśa, has been settled.
- " .. "Jain Literature," *Allahabad University Magazine*, 1924, 3. A survey of the literature in Sanskrit and Prākṛit produced by Jains has been made.
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- JAIN, H. L. .. "Apabhraṃśa Literature," *Allahabad University Journal*, 1925, 1. A survey of all literary works in Apabhraṃśa which had come to light up-to-date, most of them being discovered by the author himself.
- .. "जैन शिलालेख संग्रह," Manikchandra Jaina Granthamala, Bombay, 1928, M. D. J. S. 28. A collection of 500 inscriptions reproduced from *Epigraphia Carnatica*, with summaries in Hindi as well as introductions and indexes.
- .. "सावयधम्मदोहा," Karanja Jaina Series, 1932, K. J. S. 2. An old work in Apabhraṃśa Dohas on Jaina Morals, edited from old MSS. with introduction, translation, glossary, notes and indexes.
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- .. "णायकुमारचरित of पुष्पदन्त," Balātkāra gaṇa Jaina Publication Society, 1933, 1. A religious story in Apabhraṃśa metres, edited from old MSS. with a critical introduction, glossary, notes and indexes.
- .. "पाहुडदोहा," Karanja Jaina Series, 1933, 3. An old work in Apabhraṃśa Dohas on Jaina mysticism, edited from old MSS. with introduction, translation, glossary, notes and indexes.
- .. "करकंडचरित" of कनकामर, Karanja Jaina Series, 1934, 4. A religious story in Apabhraṃśa metres throwing light on the caves at Dhārāsīva and on the origin of the Śilāhāra dynasty. Edited with introduction, English translation, glossary, notes, indexes and appendixes.
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- .. "Some fresh light on the Dhārāsīva caves and the origin of the Śilāhāra dynasty," *Annals of the Bhandarkar Oriental Research Institute*, 1935, 16, Nos. 1-2. From certain mentions and descriptions in an old Apabhraṃśa poem, it has been shown that the modern Osmanabad in the Nizam State is the site of the ancient Tera or Terapur where some Vidyādhara adventurers established a kingdom and founded the Śilāhāra dynasty ; and the caves existing on the neighbouring hill were excavated by the early kings of this dynasty.
- .. "चंदेल राजा परमाल (परमर्दिदेव) के समयका एक जैन शिलालेख," नागरी प्रचारिणी पत्रिका, 1935, 16. An image inscription at Ahar in Tikamgarh State, dated Friday the 3rd of the bright fortnight of Mārgaśīrṣa in Vikrama Samvat 1237 (1180 A.D.) has been brought to light. It mentions Parmārdideva ruling, the object of the inscription being to commemorate the installation of the image by certain merchants of Grihapati family. The Sanskrit text of the inscription with translation and historical notes has been given.

- JAIN, H. L. .. "अमरकीर्तिगणि और उनका षट्कर्मोपदेश," जैन सिद्धान्त भास्कर, Dec. 1935 and March 1936, 2, Nos. 3-4. Gives the history of the poet and a survey of the contents of his work in Apabhraṁśa (unpublished) on Jaina morals, together with extracts and their translation.
- " .. "हिन्दी और अपभ्रंश," जैन सिद्धान्त भास्कर, July 1937, 3, No. 1. The relation of Apabhraṁśa and Hindi is illustrated by examples.
- " .. "जैन इतिहासकी पूर्वपीठिका," Hindi Grantha Ratnakar Series, 1939. A collection of the author's articles in Hindi on political, social and religious history of Jainism.
- " .. "अणुव्रत-रत्नप्रदीप," जैन सिद्धान्त भास्कर, Dec. 1939, 6, No. 3. A work in Apabhraṁśa on the duties of a Jaina house holder, is brought to light.
- " .. "षट्खंडागम, Vols. 1, 2 & 3 " Jaina Sāhitya Uddhāraka Fund, 1939-40, 1-2. The most authoritative and ancient work on Jaina philosophy in Prakrit and Sanskrit edited for the first time with introduction, translation and several appendixes.
- " .. "श्री महाधवलमें क्या है?" जैन सिद्धान्त भास्कर, Dec. 1940, 7, No. 2. A peep into the palm leaf MS. at Moodabidri which is reputed to contain one of the oldest works of high authority on Jaina Philosophy.

### SANSKRIT LITERATURE AND LANGUAGE

- CHATURVEDI, S. P. "Avestic religion as compared with the Vedic," *Bulletin of the Oriental Society* (Allahabad University), 1928-29. Points of similarity between *Avestic* and *Vedic* religions in the sphere of (i) Pantheon, (ii) Mythology, (iii) Cosmogony, (iv) Eschatology, (v) rituals and ceremonies, (vi) Philosophy and Ethics have been shown with relevant quotations.
- " .. "Bhṛṅgadūtā—a new Khandakāvya," *Proceedings and Transactions of the Fourth All-India Oriental Conference, Patna*, Dec. 1930. A recently found work of the *Dūta-kāvya* type brought to the notice of the scholars with a description of the MS., author and his date, relation with Kalidāsa's *Meghadūta* and literary estimate.
- " .. "Development of Sanskrit Prose," *Sanskrita-gadya Kusumāñjali*, March 1931, 1. A brief history of the evolution of Sanskrit Prose together with a brief description of the special features of its various phases has been given here—the first attempt of its kind.
- " .. "Homogeneity of letters in the Pāṇinian system," *Proceedings and Transactions of Seventh Oriental Conference* (Baroda), Dec. 1933, 7. A critical estimate of the views held by different commentators on the subject.
- " .. "Need for rewriting Pāṇini's Grammar," *Nagpur University Journal*, Dec. 1935, 1. A suggestion for re-casting Pāṇini's 'Aṣṭādhyāyī' to meet the modern requirements of the Sanskrit grammar has been made with a view of incorporating the amendations of the later grammarians.
- " .. "History of an important historical word in the Pāṇinian school of grammar," *Proceedings and Transactions of the Eighth Oriental Conference* (Mysore), 1935, 8. How and why the honorific word 'Devānām prīyaḥ' became a term of contempt in the hands of the later grammarians, has been shown.

- CHATURWADI, S. P. "The Anuṣṭubh Metre," *Nagpur University Journal*, Dec. 1936, 2. The history and varieties of the metre along with a study of its exceptional use by the standard poets and dramatists have been given.
- " .. "Technical terms of the Aṣṭādhyāyī," *Proceedings and Transactions of the Ninth Oriental Conference* (Travancore), 1937, 9. An alphabetical index of the technical terms along with a note on their classification and anomalous use has been given.
- " .. "Bhṛṅgadūtām," *Nagpur University Journal*, Dec. 1937, 3. This work has been edited here for the first time from a single corrupt MS.
- " .. "Pāṇini and the Ṛk-Pratishākhya," *New Indian Antiquary*, Oct. 1938, 1, No. 7. The scholastic discussion between Dr. Thieme and Ghosh on the subject has been examined and the conclusions of the latter have been shown as unconvincing.
- " .. "On the original text of the Aṣṭādhyāyī," *ibid.*, Dec. 1938, 1, No. 9. The question whether the text was originally accented or not has been discussed along with other matters about the text.
- " .. "Dr. Ghosh on Pāṇini and Ṛk-Pratishākhya," *ibid.*, Feb. 1940, 2, No. 11. A reply to Dr. Ghosh's article on my paper above.
- " .. "The structure of the Aṣṭādhyāyī," *Oriental Library Digest*, March 1940, 3, No. 9. A critical review of the books written by Mr. J. S. Pahate.
- " .. "Scholastic disquisitions in the Pāṇinian system of grammar," *Bhāratiya Vidyā* (Journal of the Research Institute—Bhāratiya Vidyā, Bombay). Nov. 1940, 2, Part I. Attention of the scholars is drawn to a so far neglected branch of study in the Pāṇinian grammar, and its importance and uniqueness shown.
- GARDE, D. K. .. "The Viḍūṣaka in the Sanskrit Drama," *Bulletin of the Allahabad University Oriental Society*, July 1933, 1932-33. The article characterises the clown in the Sanskrit drama on the basis of works on Sanskrit Dramaturgy as also with reference to the psychology of the Comic and studies this character as it obtains in the plays of Kālidāsa and his predecessors, showing how the former improved upon his models.
- KEDAR, T. J. .. "Kālidāsa, his Birth-place and Date," *Nagpur University Journal*, Dec. 1939, No. 5. The paper argues for the first century B.C. as the date of Kālidāsa and Malwa as his home. Several new arguments on this subject have been advanced in the paper.
- PANDHARIPANDE, S. P. "The author of *Vidnyān Shatak*," *विज्ञान शतकप्रस्तावना*, 1937. The article gives internal and external evidence to prove that the author of the work '*Vidnyān Shatak*' is not भर्तृहरि as is commonly supposed.

### URDU LITERATURE AND LANGUAGE

- GHULAM MUSTAFA KHAN .. "The early development of the Urdu Language," *Nagpur University Journal*, Dec. 1937, 3. It shows the gradual development of Urdu from the eleventh century A.D. upto the 16th century A.D., based upon all possible authorities.
- " .. "Hazrat Sharfuddin Yahya's contribution to the earliest Urdu Language," *ibid.*, Dec. 1938, 4. It contains two copies of the Saint's 27 sentences, which are, no doubt, amongst the earliest contribution to Urdu of the 13th century A.D.

- GHULAM MUSTAFA KIPAN "Some more works by Wali of Vellore," *ibid.*, Dec. 1939, 5. Only one work of this Wali had been known, i.e., *Rauḍaṭu'sh-Shuhadā*. His other two works "*Rauḍaṭu'l-Anwār*" and "*Rauḍaṭu'l-Uqbā*," so far unknown, have been discussed. The MS., containing these works, also contains a 'mathnawi' "*Panḍnāma*" (of A.H. 1000 = A.D. 1592)—the earliest "mathnawi" known so far. The importance of the MS. is still heightened when we understand that it was the personal copy of the poet himself, with his own signatures on it.
- " .. "Riyāḍu'l-Adab," *Ma'ārif*, January 1940, 45. I could find several other points later in the above MS. which I availed in criticising the views of the other scholars.
- " .. "The correct names of the King Allauddin Ghuri and his father," *ibid.*, July 1940, 46. Several original authorities as well as the later great scholars (like Professor E. G. Browne) had committed mistakes even about the names of 'Alā'udḍīn, the "Brûlemonde" and his father. This paper gives different verses of this king himself, besides many other proofs, that give the correct names.

## ZOOLOGY

- INAMDAR, N. B. .. "A new species of *Avian Cestode* from India," *Ann. Mag. Nat. Hist.* (London), May 1933, 11, Ser. 10.
- " .. "Four new species of *Avian Cestodes* from India," *Zeits. für Parasit.*, 1934, Band 7, Heft 2.
- KARAM SINGH .. "A contribution towards our knowledge of the *Aleyrodidae* (white flies of India)," *Memoirs of the Department of Agriculture in India*, April 1931, 12, No. 1. Deals with the description and histology of forty-four species, many of which are new to science.
- " .. "On some new *Rhynchota* of the family *Aleyrodidae* from Burma," *Records of the Indian Museum*, June 1932, 34, Part II. It embodies a record of thirteen species of which ten are new.
- " .. "On four new *Rhynchota* of the family *Aleyrodidae* from Burma," *ibid.*, Sept. 1933, 35, Part III. It is a record of four species new to science.
- " .. "The Antennæ of *Aleyrodidae*," *Current Science*, Dec. 1936, 5, No. 6. A plea for a revised classification, based on the characters of the adults, including its antennæ.
- " .. "Notes on *Aleyrodidae* from India, I," *Records of the Indian Museum*, June 1938, 50, Part II. It is a record of three new species.
- " .. "Notes on *Aleyrodidae* from India, II," *ibid.*, Sept. 1940, 42, Part III. It is a record of three new species.
- (MISRA, C. S. AND) KARAM SINGH "The Cotton white-fly," *Bulletins, Agricultural Research Institute, Pusa*, Feb. 1929, Bulletin No. 196. It deals with the description of the various stages of the cotton white fly, a record of the host plants and preliminary observations on its biology.
- KULKARNI, R. B. "A second species of *Procamallanus*, Baylis, 1923, from India," *Proc. Ind. Acad. Sci.*, B, 1935, 2.



- MAHMOOD HUSAIN "Life-history and Biology of *Galerucella birmanica* Jac. (Coleoptera, Phytophaga, Chrysomelidæ, Golerucinæ) and the external Morphology of the larva," *The Indian Journal of Agricultural Science*, August 1934, 4, Part IV. The life-history of the important pest of Singhara had been very incompletely known before. This pest causes a great damage to the singhara plants throughout India. For the control of any pest it is absolutely necessary to know its biology and life-history. A method for the control of the pest has been suggested.
- „ .. "Four cases of Abnormalities in the blood vascular system of the common Indian frog (*Rana tigrina* Daud.)," *Proceedings of the Indian Academy of Sciences*, June 1938, 7, No. 6. Abnormalities in the vascular system of frog are very common. The four abnormalities which form the subject of this paper have not so far been recorded in the Indian frog. The abnormalities were brought to the notice of the author during class dissections.
- MOGHE, M. A. .. "Caryophyllæus indicus—a new species of cestode from the cat-fish," *Parasitology*, Cambridge, May 1925, 17, 2.
- „ .. "Two new species of cestodes from Indian Coluanbidæ," *Rec. Ind. Mus.*, Calcutta, Sept. 1925, 27, 5.
- „ .. "A new species of *Monophylodim* with a key to the species of the genus," *Parasitology*, Cambridge, Oct. 1925, 17. A new genus *Southwellia* is described in this article.
- „ .. "Two new species of cestodes from Indian Lizards," *Rec. Ind. Mus.*, Calcutta March 1926, 28, 1.
- „ .. "A supplementary note on *Monophylidium* Chandleri and other related species," *Parasitology*, Cambridge, Sept. 1926, 18.
- „ .. "A new species of Trematode from an Indian Tortoise," *Ann. Mag. Nat. Hist.*, London, Dec. 1930, 6, Ser. 10.
- „ .. "A supplementary description of *Lytocæstus indicus* (*Caryophyllæus indicus* Moghe, 1925)," *Parasitology*, Cambridge, Jan. 1931, 23.
- „ .. "Two new species of Trematodes from the Indian Ruff," *ibid.*, March 1932, 24.
- „ .. "Four new species of Avian Cestodes from India," *ibid.*, July 1933, 25.
- „ .. "The development of Kidney in a Teleostean Fish," June 1937. *Thesis* for the Ph.D. of London University.
- „ .. "Development of Mesonephros in a Teleost," *Proc. of the Ind. Sci. Cong.*, January 1940.
- MOGHE, M. A., AND "Some new species of Avian cestodes from India with a description of  
INAMDAR, N. B. *Binterina intricata* (Kralbe, 1882) *Rec. Ind. Mus.*, Calcutta, March 1934, 36.
- PATWARDHAN, S. S. "On the structure and mechanism of the Gastric Mill in Decapoda. I. The Structure of the Mill in *Paratelphusa guerini* (M. Edw.)," *Proc. Ind. Acad. Sci.*, 1934, 1.
- „ .. "II. A comparative account of the Gastric Mill in Brachyura," *ibid.*, 1935, 1.
- „ .. "III. Structure of the Gastric Mill in Anomoura," *ibid.*, 1935, 1.

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# THE AGE OF ZOROASTER AND THE *RIGVEDA*

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## 1. The age in which Zoroaster flourished

THE myths and legends which have grown round Zarathushtra or Zoroaster during the course of centuries, both in the east and the west, have shrouded in mystery this great personality. Darmesteter, one of the foremost of the French Avestan scholars, even doubted the historicity of Zoroaster. But rightly this doubt has not been shared by other modern scholars. The picture we have of Zoroaster in the *Gāthās* is of a real historical person. We find him there preaching the faith in one Supreme God, Ahura Mazda, in place of the multiplicity of gods and shrines at whose altar untold of animals were sacrificed along with magic and ritual accompanied with the drink *Hoama* (Vedic: Soma). Along with a belief in one Supreme Being he also introduces a concept of a higher ethical life based on truth and righteousness. Good thoughts, good words and good deeds are to be the guiding principles of life. Evil exists and it has to be fought against by man with the utmost vigour. He teaches great regard for life and respect for the dignity of the human soul. In the *Gāthās* we find Zoroaster preaching this new gospel to people, princes and priests. We see him feeling at first disappointed and downcast as his new creed does not appear to prosper. Later on we see him triumphant and joyous as the powerful monarch Vishtāsp and his court accept his creed, and it thus takes the first step towards its becoming the universal religion of the ancient Persians.

In the *Gāthās* Zoroaster's father Pūrshāsp, of the family of Haecatāsp descendant of Spitama, his mother Dūghdova, his wife Hvovi, and his children along with his followers and disciples like his cousin Maidyōimanha, Jāmāsp, his son-in-law, and Frashaōstra, his father-in-law, and his royal patron Vishtāsp also all appear as historical personages. It is in the later Avestan literature that their figures like that of Zoroaster's get covered with myths and legends. Equally historical seem to be the traditions which give Western Iran, Adarbaijan (modern Atropatene), as Zoroaster's birth place, and Eastern Iran, particularly Bactria, where Vishtāsp held his court, as the scene of his first missionary activities, and Raghā (Rai, near modern Teheran) the home of his mother, as the centre of the spiritual power or the church he established. We may also believe as historically correct the traditions which tell us that Zoroaster received the revelation

and commenced his ministry at the age of thirty, Vishtāsp was converted to his faith twelve years later, and Zoroaster died thirty-five years after this at the age of seventy-seven.

No scholar at the present time doubts the historical character of Zoroaster as preserved in the *Gāthās* and other early Avestan traditions, but there is a great uncertainty about the age in which this great prophet of Iran lived. Even during the early centuries of the Christian era great uncertainty prevailed on this subject, and the dates assigned to him varied from 6000 to 600 B.C. Similar uncertainty prevails even to-day amongst the Zoroastrian scholars as regards the age of Zoroaster. The modern Parsi scholars have tried to push the age of Zoroaster to great antiquity. Ervad Sheriarji Bharucha attempted to prove, by a comparison of passages in the Vedas and the Avesta bearing references to personages common to both the literatures, that the two writings were contemporaneous; and following B. G. Tilak that the most active of the Vedic period commenced at about B.C. 4000, he would place Zoroaster also in the same early period.<sup>1</sup> Working out this suggestion, S. K. Hodivala also arrives at the conclusion that Zoroaster was a contemporary of the Rigvedic Rishis and belonged to great antiquity.<sup>2</sup> Irach J. S. Taraporewala places the era of Zoroaster nearly forty-three centuries ago.<sup>3</sup>

Amongst the European Scholars, Martin Haug to begin with suggested 2300 B.C., later on 1000 B.C. and finally 610 B.C. as the date of Zoroaster. Gutschmid suggested 1400 B.C., and Duncker 1000 B.C. as the period in which Zoroaster flourished. Geldner also first followed these scholars and suggested that the period in which Zoroaster flourished may have been anything from 1400–1000 B.C. But later on Geldner regarded Zoroaster as contemporary of Cyrus and Hystaspes, father of Darius, and put the earliest limit of Avesta as 560 B.C. Jackson also to begin with held that Zoroaster belonged to second Millennium B.C., but later on accepted 660 B.C. and 583 B.C. as the date of Zoroaster's birth and death respectively. Windischman suggested about 1000 B.C. as Zoroaster's date, but subsequently he, along with Geiger, put Zoroaster in the sixth century B.C. as a contemporary of Cyrus the great. Sykes also puts Zoroaster about 1000 B.C. Edward Meyer adopted 1000 B.C. as the date of Zoroaster, this is also accepted by Clemen and Lehman and Gray. Tiele also takes 1000 B.C. as the probable date in which Zoroaster flourished. Bartholome

<sup>1</sup> *Cama Memorial Volume*, p. 1 ff.

<sup>2</sup> *Zarathūstra and his Contemporaries in the Rigveda*.

<sup>3</sup> J. B. Sanjana, *Ancient Persia and the Parsis*, p. 100.

assigns the great prophet of Iran to about 900 B.C. Harlez places Zoroaster's time at about 800 B.C. Lawrence Mills also suggests 800-900 B.C. as the century in which Zoroaster may have lived. Justi, Casartelli and West along with Jackson take 660 B.C. and 583 B.C. as Zoroaster's birth and death dates respectively. Hertel puts Zoroaster's activities about 550 B.C. Röth and Floigl place Zoroaster's birth and death dates at 599 B.C. and 522 B.C. respectively. Herzfeld places Zoroaster's birth in 570 B.C.

The various references to Zoroaster's date in the old literatures have been put together and ably analysed by William Jackson in his "Zoroaster, the Prophet of Ancient Iran". In our discussion of this vexed problem we shall freely draw on this monumental work. Jackson classifies the data referring to the date of Zoroaster under three heads:—

1. The references that assign to Zoroaster the early date of B.C. 6000.
2. The allusions which connect his name with the more or less legendary Ninus, and the uncertain Semiramis.
3. The Persian traditional data, placing the era of Zoroaster about the sixth century B.C.

As regards the fabulous age of 6000 B.C., references to this are confined only to certain European classical writers. Jackson correctly observes, "such extraordinary figures are presumably due to the Greeks having misunderstood the statements of the Persians, who placed Zoroaster's millenium amid a great world period of 12,000 years, which they divided into cycles of 3,000 years, and in accordance with which belief Zoroaster's '*fravashi*' had in fact existed several thousands of years."<sup>4</sup>

The reference connecting the name of Zoroaster with that of the more or less uncertain Ninus and Semiramis are also almost exclusively confined to certain classical writers, and have little if any real foundation. "The difficulty with them is that, in addition to their general character, which bears a legendary colouring, they are based apparently upon a misinterpretation of the name of Oxyartes or its variants in a fragment of Ctesias which has been understood as an allusion to Zoroaster."<sup>5</sup>

Now let us take into consideration the Persian tradition itself regarding the date of Zoroaster. This is found in the chronological chapter of *Bündahishn* (34. 1-9) and is supported by the *Artā Vīrāf* (1. 2-5) and

<sup>4</sup> *Zoroaster*, p. 152.

<sup>5</sup> *Ibid.*, p. 154.

*Zāt-spāram* (23. 12). These in round numbers place Zoroaster three hundred years before Alexander's invasion of Persia. More definitely *Būndahishn* places the opening of Zoroaster's ministry 258 years before Alexander.

The Muhammedan writers support this Persian tradition of the interval of 258 years between Zoroaster and Alexander. Masūdī in his *Meadows of Gold* (written in 943-944 A.D.) recorded that "the Magians count a period of 258 years between their prophet Zoroaster and Alexander". The Arabic chronicler Tabarī (died 923 A.D.) too puts Zoroaster in his record of Persian reigns 258 years before Alexander. Albīrūnī (973-1048 A.D.) records, on the authority of "the scholars of the Persians, the Herbadhs and Maubadhs of the Zoroastrian", that "from Zoroaster's appearance till the beginning of the era of Alexander, they count 258 years."<sup>6</sup> Further he gives "the interval between Zoroaster and Yazdajird ben Shahpur to be nearly 970 years."<sup>7</sup> This gives about B.C. 570 as the date of Zoroaster as Yazdajird reign commenced in 399 A.D. Albīrūnī gives yet another information about the date of Zoroaster. "On the first Ramadan 319 A.H. came forward Ibn 'Abi-Zakariya . . . . If, now, this be time (319 A.H. or 931 A.D.) which Jāmāsp and Zarādusht meant, they are right as far as chronology is concerned. For this happened at the end of the era of Alexander 1242, i.e., 1,500 years after Zarādusht."<sup>8</sup> This gives 569 B.C. when the prophecy is supposed to have been made by Zoroaster and Jāmāsp. Finally we may mention that in discussing the various possibilities as to the date of the Ionian Philosopher, Thales of Miletus, who flourished about 500 B.C., Albīrūnī adds that "if Thales lived at the time of Kai-Kubād he stands near to Zoroaster".<sup>9</sup> This statement implies that Zoroaster, contemporary of Vishtāsp, came not much long after Thales who was a contemporary of Vishtāsp's ancestor Kai-Kubād, and that Zoroaster flourished in the 6th century B.C. It is rather difficult to reconcile the four different statements regarding the date of Zoroaster given by Albīrūnī, unless we regard 258 years as the interval between Zoroaster's birth and the era of Alexander. In that case all the four statements of Albīrūnī will broadly suggest that Zoroaster flourished in the 6th century B.C. The Persian historical work, *Mujmal-al-Tawārikh* (A.D. 1126), following the authority of the chronicle of the kings of Persia, brought from Persia by Bahram,

<sup>6</sup> Albīrūnī, *Chronology of Ancient Nations* (Ed. Sachau), p. 17.

<sup>7</sup> *Ibid.*, p. 121.

<sup>8</sup> *Ibid.*, p. 196.

<sup>9</sup> *Ibid.*, p. 32.

son of Merdانشah, Mobed of Shahpur, also enumerates the period between Zoroaster and Alexander as 258 years.

Some modern scholars have doubted the reliability of the chronology of *Būdahishn* and regard the Persian tradition of the difference of 258 years between Zoroaster and Alexander as only a later-day echo of the chronology given by the Arab scholars. For instance, E. W. West remarks, "the chronological chapters of the *Būdahishn* is a comparatively modern addition to that work, being specially headed by the words 'madam shnat mar-i-Tāzīkān', "on the year-reckoning of the Arabs", and cannot, therefore, be quoted as an independent authority of ancient date on the subject".<sup>10</sup> This is not a correct view. Jackson rightly observes, "The introduction to the chronological chapter of the *Būdahishn*" (34) does indeed read, according to one MS., 'on the reckoning of the years of Arabs', but the word 'Tāzhikān of the Arabs' is not found in other manuscripts. Moreover, the scientific investigator Albīrunī and also the Mujmal-al-Tawārikh, whose data agree exactly with the *Būdahishn*, affirm that the dates given for the Kayanian kings are obtained from the records of the Persians themselves. There seems no reason, therefore, to doubt that the *Būdahishn* really represents the Persian chronology. But what the value of that chronology may be, is another matter. Personally I think it has real value so far as giving the approximate period of three centuries before Alexander as Zoroaster's era."<sup>11</sup>

Thus the interval of 258 years between Zoroaster and Alexander is a pre-Mohomedan Persian tradition. But this weakens the evidence of the Arab writers for the same, because they have taken it from the Persians themselves, and their statement about it cannot be treated as an independent evidence. Moreover, in trying to fix a more exact date for Zoroaster with the help of the traditional interval of 258 years between the beginning of the ministry of Zoroaster and the era of Alexander several factors of uncertainty crop up. Shall we take the ministry of Zoroaster as commencing with his first preaching his new religion, which was done when he was thirty years old, or with the conversion of Vishtāsp which happened when Zoroaster was 42 years old? Albīrunī's statement that "from Zoroaster's appearance till the beginning of Alexander's era, they count 258 years"

<sup>10</sup> Introduction to the Third Edition of Haug's *Essay on the Sacred Language, Writings, etc., of the Persians*, p. xlvī.

<sup>11</sup> *Zoroaster*, p. 173.

We may also note that Masūdī too says, as noted above, that his information regarding the difference of 258 years between Zoroaster and Alexander is based on Magian reports,



may be taken to mean that this difference is between the birth of Zoroaster<sup>12</sup> and Alexander's era, and, as we have seen above, this will reconcile the various statements of Albīrunī regarding the date of Zoroaster. Then as regards the era of Alexander, shall we take it to commence with his accession to his father's throne (336 B.C.) or with his conquest of Persia (330 B.C.)? According to these varying assumptions different dates for the birth of Zoroaster can be derived. The lower limit for the date of birth of Zoroaster will be 588 B.C., on the assumption that 258 years elapsed between Zoroaster's birth and conquest of Persia by Alexander. The upper limit will be 636 B.C. on the assumption that 258 years elapsed between the conversion of Vishtāsp, which took place when Zoroaster was 42 years old, and the accession of Alexander in 336 B.C. on the Macedonian throne. Assuming that the coming of the religion refers to the entry of Zoroaster on his mission when he was 30 years old, on the basis that 258 years elapsed between this event and the beginning of the career of Alexander, or 272 years till the close of his career (323 B.C.), we get  $(323 + 272 + 30)$  625 B.C. as the date of Zoroaster's birth. To this West adds another 35 years which he regards as an omission in the reckoning, and arrives at 660 B.C. and 583 B.C. as the Zoroaster's birth and death dates respectively. These dates, as already mentioned, are accepted by Jackson and some other scholars. But they are very hypothetical. Besides the arbitrary adding of 35 extra years,<sup>13</sup> as already discussed, 'the coming of religion' and the era of Alexander are highly uncertain dates and even too much insistence cannot be placed on 258 as exactly representing the difference of

<sup>12</sup> Compare the following remark of Herzfeld, "The *Bundahishn* speaks of the 'coming of the religion' and for the same event as of 'the coming of Zoroaster to Vishtāsp'. But Albīrunī has another expression 'Zuhūr'. This word translates, no doubt, the common Pahlvi word 'Pētākīh'. The Pahlvi as well as the Arabic word are equivalent to Greek 'epiphaneia' epiphany. Pētākīh was the word in the source of *Bundahishn*. . . Any other explanation of pētākīh, the epiphany of Zoroaster, than that as his appearance on earth, his birth, is artificial." *Oriental Studies (in Honour of Pavry)*, p. 135.

<sup>13</sup> This figure West has to add because he wants to give more credit to the tradition which gives 300 years between 'the coming of the religion' and Alexander. Compare the following remark of his: "We cannot place Alexander's invasion of Iran itself at a later date than the battle of Gaugamela (331 B.C.) and if this were the 300th year of the religion, the death of Alexander (323 B.C.) must have occurred in its 308th instead of its 273rd year, and the coming of the religion would have to be put back 35 years." *S.B.E.*, Vol. xlvii, Part V, p. xxviii.

We may contrast with this the view of Herzfeld, who suggests that era of Alexander had not been in use in Persia, and it may refer to the Seleucid era which commenced in 312 B.C. and which was 'in common use in Iran during the Seleucid and at least the first half of the Arsacid period'. Thus reckoning 258 years between the birth of Zoroaster and 312 B.C. Herzfeld places the birth of Zoroaster in 570 B.C. *Oriental Studies (in honour of Pavry)*, p. 136. This only brings into relief the uncertainty which attaches to the era of Alexander referred to in the old Persian tradition just as there is uncertainty regards the expression "coming of the religion".

time between the above two events. Like the traditional 300 years, 258 years should also be taken as indicating roughly the difference of time between Zoroaster and Alexander.

Let us now examine some other traditions regarding the date of Zoroaster, which appear to be independent of the above tradition of 258 years as the interval between Zoroaster and Alexander. The Dābistān records that the holy cypress which Zoroaster had planted at Kishmar (in Khorasan) and which was cut down by the order of Mutawakkal, tenth Khalif of the Abbasides (846-860 A.D.), had stood 1450 years from the time of its being planted to the year 232 of the Hijrah<sup>14</sup> (846 A.D.). Reckoning 1450 years according to the lunar calendar of the Mohomedans, as seems likely in the case, which will be equal to 1408 solar years, the epoch of the planting of the holy cypress, would be (1408-846) 562 B.C.<sup>15</sup> As alluded to in Firdausī, the planting of the holy cypress took place at the time of the conversion of Vishtāsp. Zoroaster at that time was 42 years old. This will place the birth of Zoroaster in 604 B.C. and the death of Zoroaster in 527 B.C.

We may here also mention another tradition, which, because of its independent sources, is of considerable importance. Eutychius, the Alexandrine Patriarch (876-993 A.D.), makes Zoroaster a contemporary of Cambyses and the Magian Smerdis, a view which is supported by the Syrian Gregorious Bar 'Ebhrāyā (c. 1250 A.D.) and by the Arab chronologist al-Makīn.<sup>16</sup> As Cymbysus died in 523 B.C. and Smerdis occupied the Persian throne for a few months after this, Zoroaster's death can be placed at about

<sup>14</sup> Dābistān, i. 306 ff. (Trans., by Shea and Troyer).

<sup>15</sup> Röth (*Geschichte unserer abendlandischen Philosophie*, i. 350); and following him Floigl (*Cyrus and Herodot*, pp. 15, 18), take 560 B.C. as the era of cypress.

<sup>16</sup> Jackson, *Zoroaster*, p. 167. We have in the Fragments of Ctesias references to one Spitama and his two sons Spitakin and Megabernes. Spitama and his wife Amytis saved Cyrus when he was to be beheaded by the order of Astyages. At his death-bed Cyrus appointed Spitakin as satrap of Derbikes and Megabernes as the satrap of Herkania and asked them to obey their mother. We may note that according to Yasht 19, 18 Zoroaster was the temporal lord of Raghā (the home of his mother) which adjoined Herkania. Ctesias also refers to one Sphendadates a Magian who, after the murder of Cyrus' son Tanyoxarkes, ruled the provinces of Bactria, Parthia, Chorasmia and Carmania until his revolt against Cambysus. Ctesias further says that the "Persians celebrate a festival called the Slaughter of the Magians, commemorating the murder of the Magian Sphendadates. Darius ordered a tomb to be built for him upon the twin mountains, and it was built (Gilmore, *Persika of Ctesias*, p. 140 ff). Now we know that Spentodata (Av.) or Spenddat (Phe.) or Isfendiar (Pers.) is an important Zoroastrian figure in the Persian traditions. If Zoroaster was contemporary of Cyrus and Cambysus, these obscure references by Ctesias to one Spitama and his family and to Sphendadates the Magian may suggest the association of Zoroaster with the early Achæmenians.

522 B.C. This is the view adopted by Röth and Floigl. This gives 599 B.C. as the birth date of Zoroaster.

This tradition that Zoroaster was contemporary of Cyrus and Cambyses is further borne out by a very important statement of an earlier authority, Ammianus Marcellius (5th Century A.D.) who directly calls Hystaspes (Vishtāsp), the disciple and the royal patron of Zoroaster, as the father of Darius.<sup>17</sup>

We may also mention a persistent tradition amongst the classical authors that Pythagoras was a pupil of Zoroaster. "Polyhistor (about first century B.C.), Plutarch (A.D. 46-120), Apulicus of Madaura (A.D. 124-170), Clement of Alexandria (A.D. 150-211) and Hippolytus say on the authority of Diodorus of Eretria (60 B.C.) and Aristoxenus, a disciple of Aristotle, that Pythagoras was a pupil of Zoroaster."<sup>18</sup> Pythagoras' birth has been variously placed between 586 B.C. and 569 B.C., and his death towards the close of the 6th century. As the period of the activity of Pythagoras appears to be the latter half of the 6th century B.C., the above tradition will assign Zoroaster also to the 6th century B.C.

There is striking resemblance between the language of the *Gāthās*, which are generally taken to be composed by Zoroaster himself and his immediate disciples, and the language of the old Persian in which we have the inscriptions of Darius I and his successors. As E. G. Browne remarks, "That the language of the Avesta is an Iranian language, standing to old Persian in the relation of sister not of daughter or mother, is proved beyond all reasonable doubt."<sup>19</sup> This also suggests the 6th century B.C. as the age of Zoroaster.

We have tried to survey briefly the various traditions regarding the age of Zoroaster. This shows the difficulty of fixing any very precise dates for the birth and death of Zoroaster. But the Persian tradition, supported by the Mohomedan scholars, taken together with other independent traditions referred to above converge on the 6th century B.C. as the age of

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<sup>17</sup> Ammian. Marcell. 23, 6, 32, "magiam opinionum insignium auctor amplissimus Plato, machagistiam esse verbo mystico docet, diuinorum incorruptissimum cultum, cuius scientiae saeculis priscis multa ex Chaldaeorum arcanis Bactrianus addidit Zoroastres, deinde Hystaspes rex prudentissimus Darii pater."

A century after Ammiannus Marcellinus, Agathias felt a doubt whether this Hystaspes, the patron of Zoroaster, was father of Darius or some other Hystaspes.

<sup>18</sup> Dhalla, *History of Zoroastrianism*, p. 143.

<sup>19</sup> *Literary History of Persia* (From the Earliest Times to Firdausi), p. 25. Martin Haug also observes that the language of the inscriptions of the Achæmenians "was closely allied to that of Avesta". *Essays on the Religion of the Parsis*, p. 54.

Zoroaster. As noted above, some of the statements of Albīrunī, the tradition of the era of cypress referred to in the Dābistān, and the various more or less independent traditions which put Zoroaster in the time of Cyrus, Cambysus and Hystaspes, father of Darius, do indicate that the age of Zoroaster will fall in the first three-quarters of the 6th century B.C. 599 B.C. as the birth date and 522 as the date of death suggested by some of these traditions and accepted by Röth and Floigl may be near the mark.

## 2. Zoroaster and the Achæmenians

In the light of the conclusion reached in the previous section that the evidence seems very strongly to converge on the first three-quarters of the 6th century B.C. as the period in which Zoroaster flourished, the question of identification of Vishtāsp, the royal patron of Zoroaster, and Vishtāsp, the father of Darius I mentioned in the Achæmenian inscriptions and by Herodotus and other Greek historians, who call him as Hystaspes, becomes a very important one. Following the suggestion of William Jones,<sup>20</sup> to begin with Malcolm and other European scholars of Persian history accepted the identification of Cyrus the great with Kai-Khusrau of the Persian Epic or Kava Husravah of the Avesta. This identification made them regard the Achæmenian dynasty identical with the Kaiyanian, and naturally Vishtāsp of the Avesta or Gushtāsp of the Persian Epic and the Pahlvi literature as identical with Vishtāsp or Hystaspes the father of Darius. But subsequently most of the modern scholars abandoned these identifications, chiefly on the ground that Zoroaster and therefore Vishtāsp of the Avesta and the Persian Epic lived long before Vishtāsp, the father of Darius.

If Zoroaster is assigned to a period before the 6th century B.C., naturally it has to be assumed that Vishtāsp, the royal patron of Zoroaster, is different from Vishtāsp the father of Darius. Even Jackson and others, who accept 660–583 B.C., a period just preceding the rise of the Achæmenians, as the period in which Zoroaster lived, have to postulate two Vishtāsps, and regard the identification of Vishtāsp of the Avesta with Vishtāsp the father of Darius as erroneous.<sup>21</sup> But if Zoroaster is assigned to the 6th century B.C. the two Vishtāsps then become contemporaries. If they were two distinct persons living at the same time, in what relation they and their dynasties stood to each other? Jivanji Jamshedji Modi makes the curious suggestion that "the Achæmenians and Kaiyanians were contemporaneous, the former ruling in the West, and the latter in the East

<sup>20</sup> *Works*, Vol. I, p. 73 ff. (1789).

<sup>21</sup> Jackson, *Zoroaster*, p. 171.

(Iran)."<sup>22</sup> History of the period, so far known, will not warrant this conclusion. A. M. Shustrey gives an equally fanciful explanation that "the Kaiyanians who were the upholders of Avestan teaching, lost their temporal supremacy after a glorious period, but . . . perhaps retained their spiritual influence for a considerable time. It is with such idea that the Persian historians have referred to the great Achæmenian Emperors, such as Cyrus, Darius, and others, as the Viceroys in Western Iran of the Kaiyanian Popes."<sup>23</sup> This conjecture too will not be borne out by whatever is known of the history of the period.

If the two Vishtāsp belonged to the same period, which, as discussed in the previous section, seems to be the case, there are strong reasons to conclude that the two are identical. We sum up below the reasons which may be advanced for this view.

(1) In dealing with the Kaiyanian dynasty the Persian traditions are dealing with the Achæmenian dynasty. This is borne out by the fact that like the Achæmenians, the Kaiyanians also, according to the various Persian traditions, flourished in the three centuries preceding the invasion of Iran by Alexander. Besides Vishtāsp himself, the account of the Kaiyanian dynasty includes the account of some of his descendants, like Ardashīr Dirāzdest, who appears to be the same as Bahman,<sup>24</sup> and who beyond doubt is Artaxerxes Longimanus of the Greek historians, and of Dārā who is certainly Darius Codomannus, the Persian Emperor overthrown by Alexander.

In the case of Ardashīr Dirāzdest and Artaxerxes Longimanus not only the two names are the same, but there is also the striking similarity in the account of the former as found in the Persian traditions and that of the latter as described by the Greek historians. As Malcolm pointed out, "It is recorded by the Greek historians, that Xerxes was slain by his relation, Artabanus, who is described as a powerful and ambitious chief, that he had

<sup>22</sup> J. J. Modi, *Asiatic Papers*, Part II, 118.

<sup>23</sup> *Iran League Quarterly*, Bombay, Vol. IV, Nos. 2-3, 195.

<sup>24</sup> From the Shāhnāmāh we gather that Ardashīr was the title borne by Bahman and it also explains why he was called 'Long-handed' or Dirāzdest.

The Shah (Gustāshp) bestowed on him (Bahman) the name Ardashīr.

On seeing what great courage he possessed.

He was a stalwart warrior, strong of hand;

A wise man well-instructed, and devout;

And with his fingers dressed beside his legs

His fists extended lower than his knees.—*Shahnamāh* (Warner), Vol. V, p. 259.

In the Pahlvi texts also we find that another name of Vohuman (Bahman) was Artakshatar (Bund., xxxi, 29, 30) which seem to identify him with Artaxerxes Longimanus (*S.B.E.*, Vol. V, Part I, p. 149, Footnote 10).

placed Artaxerxes upon the throne with an intention of seizing it for himself. He had, the same authors assert, many dependents and his sons were the most celebrated among the warriors of Persia for their personal prowess and courage. This act produced a war, in which several of the heroes of Persia were slain. But the prince succeeded in his object—the extinction of the name and power of the family of Artabanus; and took vengeance for the blood of his father, by putting to death every one that had been concerned in the murder. If we compare the account which Persian writers give of this transaction, and divest it of what is evidently fiction, we shall find a complete correspondence in every essential which can be necessary to establish, that the Persian and Greek authors record in this part of ancient history the same event. Rustam, the hero of Persia, was hereditary prince of Seistan, and nearly related to the royal family. He was powerful, not only from his character and possessions, but from the number and quality of his dependents, and his sons were the most renowned among the warriors of Persia for their valour and prowess. This chief slew Asfendiār, but he protected Ardashīr, the son of that prince, who, through his influence, ascended the throne. Ardashīr, however, soon became jealous of Rustam, and not only caused that chief to be slain, but invaded and subdued his hereditary province and put to death all his family, on the pretext of revenging the blood of his father.”<sup>25</sup> In Parysatis of the Greeks, the daughter of Artaxerxes Longimanus<sup>26</sup> and the wife of her brother Darius Nothus, who is represented as possessing great influence and authority in the government, Malcolm was right in detecting an approximation to Humāi of the Persian traditions.<sup>27</sup> According to *Shāhnāmāh* Humāi was the daughter of Bahman Ardashīr, who also married her; and she became the ruler after Ardashīr.

We may note the exact agreement in broad details in the two accounts. This coupled with the identity of the names of Ardashīr Dirāzdest and

<sup>25</sup> Malcolm, *History of Persia*, Vol. I, p. 235 ff. (John Murray, 1825). Malcolm also suggested the identification of Isfendiār, father of Ardashīr, with Xerxes, father of Artaxerxes.

<sup>26</sup> Compare the following remark of Plutarch: “The first Artaxerxes, among all the kings of Persia the most remarkable for a gentle and noble spirit, was surnamed the Long-handed, his right hand being longer than this left, and was the son of Xerxes. The second, whose story I am now writing, who had the surname of the Mindful (Mnemon), was the grandson of the former, by his daughter Parysatis.” *Lives* (The Modern Library), p. 1251.

<sup>27</sup> Malcolm, *History of Persia*, Vol. I, p. 238.

West also suggests that in the *Pahlvi text* (Bund., xxxi, 29, 30) Vohuman “is said to have been also called Artakshatar, which seem to identify him with Artaxerxes Longimanus, and his successors down to Artaxerxes Mnemon; so that Humāi may perhaps be identified with Parysatis, and Dārāi-Kīharāzādān with Artaxerxes Ochus, as Dārāi Dārāyān must be Darius Codomannus, while the reign of Kai-Vishtāsp seems intended to cover the period from Cyrus to Xerxes.” *S.B.E.*, Vol. V, Part I, p. 149, Footnote 10.

Artaxerxes Longimanus and the fact that both were ardent Zoroastrian rulers,<sup>28</sup> seem to indicate almost beyond doubt that the Greek and the Persian accounts under discussion refer to one and the same person.

Some modern scholars suggest that the account of Ardashīr Dirāzdest has been drawn into the Persian traditions from some foreign sources. A. G. Warner and E. Warner remark, "Originally Bahman appears to have had no connection with the historical Artaxerxes Longimanus, with whom he has been identified by various writers. Artaxerxes, however, was a familiar name in its Persian form in Sasanian times owing to the fact that another Artaxerxes had overthrown the Parthian, and founded a native Iranian dynasty. The compilers of the *Bāstānnāma*, who seem to have become acquainted through some Syriac writer who drew his material from a Greek chronographer, with the first Artaxerxes, readily identified him with Bahman the only traditional Iranian ruler available. Luhrāsp and Gushtāsp on one side, and Dārāb and Dārā on the other, were alike out of the question, while Humāi was a woman. Accordingly Bahman received the name and distinguishing title of the Achæmenid, and became known as Ardashīr—a form of Artaxerxes and as Dirāzdest—a translation of the Greek *Μακροχελρ* . . . . If the view expressed at the beginning of this note is correct, and it is substantially Professor Nöldeke's, that the title of the Long-handed was derived through the Syriac from Greek sources and bestowed on a wholly mythical personality, we may conclude that other events of the reign of the Long-handed were borrowed from the same foreign source and reflected back in the like manner."<sup>29</sup> We may note in the above the creation of a myth of an unknown Greek chronographer, from whom an unknown Syriac writer drew his material and from whom the early Persian writers got to know about Ardashīr Dirāzdest and grafted this account on Bahman. What a curious manner of disproving the truth underlying what appears to be an old genuine historical tradition about Bahman or Ardashīr Dirāzdest. As next to Vishtāsp he was perhaps the most ardent Zoroastrian monarch, who, according to the Zoroastrian traditions, 'made the Religion current in the whole world',<sup>30</sup> there is no wonder

<sup>28</sup> Compare the following remark of Jackson :

"Tradition according to Bahman Yasht (2, 17) asserts that Artashīr the Kayān, whom they call Vohūman son of Spenddāt, and whom we know as Ardashīr Dirāzdest or the 'Long-handed', is the one 'who made the Religion current in the whole world.' Actual history agrees with this in so far as it shows that Artaxerxes Longimanus, or the 'Long-handed' was an ardent Zoroastrian ruler." *Zoroaster*, p. 133.

<sup>29</sup> *Shāhnāmāh*, Vol. V, p. 281-82.

<sup>30</sup> *Bahman Yasht*, 2, 17.

that more detailed account of him was left in the old Persian traditions than of the other rulers in his line.

Besides the historical figures of Ardeshr Dirāzdest and Dārā, which appear alike both in the Kaiyanian and the Achæmenian dynasties, one cannot but be impressed by the striking similarity in the general nature of the account of Cyrus the Great given by Herodotus and the account of Kai-Khusrau we have in Firdausi's *Shāhāmāh*. As Malcolm remarks, in both the narratives "a grandson is born to a king, who, fearful for his safety, seeks the destruction of the infant, which he delivers to his minister to be put to death. The child is preserved by the person directed to slay him. The monarch discovers this and consents to let him live. The young prince wars upon his grandfather, whose army is commanded by the very minister who had been the instrument of his preservation. He subdues the country that he attacks, and erects a proud empire upon its ruin . . . . It is nowise necessary to the establishment of the fact that the Kai-Khusrau of Persian history is the Cyrus of the Greeks to prove the truth of all those events that are connected with his infancy. It is sufficient to show that they are related to one person; and that Herodotus transmitted the same tradition what has since been recorded by Firdausi."<sup>31</sup> This conclusion of Malcolm based on the suggestion of William Jones regarding the identification of Cyrus and Kai-Khusrau is based on strong grounds.

It may also be rightly conjectured that in the account of the long reign of Vishtāsp or Gushtāsp of the Persian traditions we have the reflection of the events of the time both of Hystaspes and his son Darius. "The period ushered in by the death of Cambyzes was one of great religious and political disturbance. Magism became very prominent in the person of the false Smerdis, and, whatever interpretation we put upon the statement in the Bihistūn inscription, that he destroyed the temples of the gods and that Darius restored them, it is evident that some grave religious question was at stake. Further, the accession of Darius was the signal for a series of revolts extending over several years and involving nearly the whole empire. It was only after a most desperate struggle that the genius of Darius triumphed. Among his other enemies, he had to contend against the northern foe—the Scythians—and later on led a famous expedition against them to the banks of the Danube. These three features of his reign—the religious question, civil war, and wars with the Scythians—are all indicated in a legendary form in the reign of Gushtāsp. The religious question is very prominent, the civil war is represented by the fact that the leaders

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<sup>31</sup> *History of Persia*, pp. 227-28.



on both sides have Persian names, while the wars themselves are waged against a northern foe. Again, the information that we possess seems to indicate that Darius was the Constantine the Great in his time, and changed his religion in the course of his reign just as Gushtāsp is represented as doing in the *Shāhnāmāh*.<sup>32</sup>

The facts surveyed above seem to clearly indicate that in the Persian traditions Kaiyanian dynasty was treated as a historical dynasty, and which, according to them, was the same as the Achæmenian dynasty.

Doubt has been cast on the identity of Vishtāsp, the royal patron of Zoroaster, and Vishtāsp the father of Darius on the ground that the genealogy of the former as found in the Avestan literature is different from the genealogy of the latter as found in the Achæmenian inscriptions and the Greek accounts. Martin Haug made a capital mistake when he mixed up the lineage of Kai-Khusrau with that of Vishtāsp and rejected on that ground the identification of Vishtāsp the patron of Zoroaster and Vishtāsp the father of Darius. Haug observes, "The Parsis believe that their prophet lived at the time of Darius' father, Hystaspes, whom they identify with the Kava Vishtāsp of the *Zend-Avesta*, or Kaī Gushtāsp of the *Shāhnāmāh*, and place his era accordingly about B.C. 550. But the groundlessness of this supposition may be seen on comparing the names of the predecessors of Hystaspes with those of the ancestors of Vishtāsp. The lineage of Vishtāsp or Hystaspes, according to the Bihistūn cuneiform inscription of Darius, and the statements of Herodotus, is as follows: Hakhāmanish (Achæmenes), Chaishpish (Teispes), Ariyārāmna (Ariaramnes), Arshāma (Arsames), Vishtāsp (Hystaspes), Dārayayush (Dareios). But the lineage of Vishtāsp or Gushtāsp, according to the *Avesta* and *Shāhnāmāh*, is as follows: Kavi Kavāta (Kaī-Kabād), Kava Usa (Kaī-Kāūs), Kava Husrava (Kaī Khusrō), Aurvadāsp (Lahurāsp), Kava Vishtāspa (Kaī Gushtāsp). From these genealogies it will be seen that the names of the ancestors of the Vishtāsp mentioned in the cuneiform inscriptions are totally different from those of the ancestors of the Vishtāsp celebrated in Zoroastrian tradition. We must, therefore, conclude that the Vishtāsp of Iranian tradition was a totally distinct person from the Hystaspes of the Greeks, the father of Darius."<sup>33</sup> According to the tradition both of the *Avesta* and the *Shāhnāmāh*, Aurvatāsp or Lohrāsp was not the son of but was the cousin of Kai-Khusrau.

<sup>32</sup> A. G. Warner and E. Warner, *Shāhnāmāh of Firdausi*, Vol. V, pp. 10-11.

<sup>33</sup> *Essays on the Religion of Parsis*, pp. 298-99.

Apart from the difficulty of equating each and every name occurring in the lineage of Kava Husravah and Kavi Vishtāsp with the names of the ancestors of Cyrus and Hystaspes occurring in the Achæmenian inscriptions, the broad and the important fact remains the same that like the Achæmenians the Kaiyanians also ruled in a double collateral line. In the case of the former with the death of Cambyzes, the son of Cyrus, one of the collateral lines came to an end, and the throne passed on to Darius, who belonged to the other line. The same change from one collateral line to the other is suggested in the Persian traditions when after Kai-Khusrau the throne is supposed to pass on to his cousin Lohrāsp and then to Lohrāsp's son Gushtāsp, who completely overshadows his father.

It has also been suggested by some scholars that Vishtāsp, the patron of Zoroaster, cannot be the same as Vishtāsp, the father of Darius, because the former is known in the tradition to be a ruling monarch but the latter is known only as a provincial governor first under Cyrus and Cambysus and then under his own son Darius. Against this we have the testimony of the inscription of Darius according to which his father Vishtāsp was one of the kings who had preceded him on the throne. It may be surmised that Vishtāsp was, perhaps, an independent king of his ancestral domains in Pars to begin with. Afterwards when Cyrus founded an empire and the Province of Pars and Anshan were joined, Vishtāsp accepted important Provincial governorship. He may have yet retained his royal title.

By taking the Kaiyanian and the Achæmenian dynasties as two distinct lines the modern Iranian scholarship has gone off the rails. This has led to a misunderstanding of the Persian traditions and an injustice has been done to them. The confusion of thought resulting from distinguishing these two dynasties is responsible for the view now generally held by the Parsi scholars that "the Pahlvi writers had no Avestan or historical accounts from which they could have got the true epoch of Vishtāsp and Zarathūstra; that they had no knowledge of the real rulers of Iran during the three-hundred years which they mention in their works. All that we can say is that they, having known through the Avesta or from some other sources that Vishtāsp and several kings of his dynasty had made themselves famous by their sovereignty over a large part of primitive Iran, and having also known that some mighty monarchs of Iran had governed over a large empire before the conquest of Alexander the Great, were mistaking one for the other."<sup>34</sup> And a scholar even like Jackson wonders that "it certainly seems curious that we have no mention (in the Pahlvi texts) of

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<sup>34</sup> R. E. D. P. Sanjana, *Zarathūstra and Zoroastrianism in the Avesta*, p. 46.

Cyrus nor of the pious Mazda-worshipper Darius, unless we are to understand that the events of their reigns are merged in a general way into the achievements of Isfendiār."<sup>35</sup>

If we do not push Zoroaster into fabulous antiquity, we have strong reasons, as discussed above, to believe that the Persian traditions have preserved the account of Cyrus in Kai-Khusrau, of Hystaspes in Vishtāsp, the royal disciple and patron of Zoroaster, of Artaxerxes Longimanus in Ardashīr Dirāzdest and of Darius Codomannus in Dārā, whom Sikandar (Alexander) defeated. It may yet be argued, how it is that the most important figure in the early Zoroastrian world, namely Darius the great, whose inscriptions are the first recorded monument of a monarch's faith in Zoroaster's Supreme God Ahuramazda, is not mentioned in the Avestan literature and the other Persian traditions. We may offer a surmise for this important gap. As suggested above, in the traditional account of Gushtāsp (or Vishtāsp) we have the account both of Vishtāsp as well as his illustrious son Darius the great. It may be that the Kava Vishtāsp of the *Gāthās*, for whose conversion to his faith Zoroaster prays, may be distinguished from Berezaidhi Kava Vishtāsp of the later Avestan tradition found in the "Yashtas", whom we find praying for the destruction of his foes.<sup>36</sup> These traditions mention some eight powerful foes over whom Berezaidhi Kava Vishtāsp, invoke divine aid in battle, and victory descends upon the banner in answer to his prayers. This recalls the several revolts, some of a semi-religious character, which Darius has to suppress before he could firmly sit on the throne. Vishtāsp seems to have become a patronymic. We gather from Herodotus (VII. 64) that one of Darius' own son bore the name Hystaspes (Vishtāsp). Darius himself may have also been known by this patronymic. It may be that Berezaidhi Kavi Vishtāsp is the son of the Kavi Vishtāsp of the *Gāthās* and is Darius the Great. The later Persian traditions may have regarded these as one person, to whom these traditions assign a long period of reign of 120 years, in which, as already discussed, the events of the period of both Vishtāsp and Darius are described.

We have yet another important name, which is intimately associated in the Avestan accounts with Zoroaster, also mentioned in the Greek accounts of the Achæmenians. We have in the Avesta queen Hutaosa for whose association with himself and his religion Zoroaster fervently prays.<sup>37</sup> We also find Hutaosa herself praying for being received with love in the

<sup>35</sup> *Zoroaster*, p. 134.

<sup>36</sup> *Aban Yasht*, XXI, (5) 107-10; *Ghosh Yasht*, XXV (9) 28-32; *Ashī Yasht*, XXXIII (17) 48-52.

<sup>37</sup> *Gosh Yasht*, XXV (9), 24-27; and *Ashī Yasht*, XXXIII (17), 44-47.

dwelling of Kavi Vishtāsp.<sup>38</sup> From Herodotus we learn of Atossa (which appears to be the Greek form of Hutaosa), the daughter of Cyrus the Great, who was first married to her own brother Cambyses, and after his death was married to Darius. Herodotus (VIII. 4) also informs us that Atossa had unbounded influence over Darius and his court, and she succeeded in getting her son Xerxes nominated as the successor to the imperial throne after Darius. Modern scholars have assumed that Hutaosa was the queen of Vishtāsp or Gushtāsp. But in the early Persian traditions Hutaosa is not mentioned as Gushtāsp's wife. We have Katāyūn, also known as Kitābūn and Nāhid, as the name of Gushtāsp's wife. As we have discussed above, in the account of Vishtāsp in the Persian traditions we have the events of the time of Vishtāsp and also of his son Darius, and, perhaps, Darius was also known by the patronymic Vishtāsp. It may be surmised that Hutaosa of the Avesta is the same as Atossa the queen of Darius and mother of Xerxes. It would be natural that Zoroaster would like a person of the position and influence of Atossa to be his disciple, and it may be that she was one of the early converts to the faith of Zoroaster, and it was perhaps partly through her unbounded influence that Darius too adopted this new faith. Zoroaster had died, perhaps, a little before Darius came to power.

(2) In support of the view that Vishtāsp, father of Darius, was the same as Vishtāsp, the royal patron of Zoroaster, we have the statement of Ammianus Marcellius, which tells us that Hystaspes, the royal disciple of Zoroaster was Hystaspes, the father of Darius. As already suggested, Ammianus Marcellius wrote in the 5th century A.D., and his testimony deserves great weight.

(3) We gather from the inscriptions of Darius that his father Hystaspes was one of the eight kings in his family who had preceded him, and that at the time Darius occupied the imperial throne, founded by Cyrus, his father Hystaspes was ruling over the eastern provinces of the Achæmenian empire. The Avestan literature too informs us that it was in the eastern Iran that for the first time Zoroaster ministry was successful, and that it was in Bactria that Vishtāsp and his court were converted to his religion.<sup>39</sup>

<sup>38</sup> *Ram Yasht*, XXXI (15), 34-37.

<sup>39</sup> Compare Jackson's remarks: "We may also recall the story of the cypress which Zoroaster planted to commemorate the event of Vishtāsp's conversion. This hallowed tree was planted at Kishmar in Khorassān, and it is spoken of in the *Shāhnāmāh* as the 'the cypress of Kishmar'. It must also be remembered that, according to the *Shāhnāmāh* Khorassān was under the suzerainty of one of Vishtāsp's sons, as well as it was the amphitheatre of the final Holy War." As he further remarks, "These latter points are of interest also in connection with Floigl's claim that Vishtāsp, of the Avesta, is identical with the historical Hystaspes, father of Darius; and that he belonged in the region of Hyrcania and ancient Parthia." *Zoroaster*, p. 217.

(4) We may also note the contention of Herzfeld based on Masūdi and the Iranian *Būndahishn* regarding "the transplantation of the fire Adhur Khurah from its original home in Khwārizm to a place called Kārikān in Fārs. The transplantation of one of the three holiest fires to a place in Fārs, the home of the Achæmenian and no other old dynasty always seemed to me a certain proof that the king who did it belonged to the Achæmenian family, in other words, that Vishtāsp the protector of Zoroaster was an Achæmenid . . . . In the Iranian *Būndahishn* the text runs :

"Under the reign of Yim (Jamshid) the Adhurxvar-reh (Fire) was established on Xvarnahwant Kōh (the Glorious mountain) in Khwārizm . . . . under the reign of Vishtāsp, upon a revelation from the religion, it became established (transferred) from Khwārizm to the Roshan Kōh (the Spring mountain) of the district of Kanārangs, where it remains even now.

"It is evident that we learn here the name of the actual residence of Vishtāsp, for to no other place he can transplant the fire. The district of Kanārangs is, as we know already, the plain of Nishāpur, in which there has always been the capital of the province of Parthava."<sup>40</sup>

So far as available historical evidence goes there is no mention of Vishtāsp earlier than Vishtāsp, the father of Darius, there is also no mention of a period earlier than that of the Achæmenians in which the Persians rose to prominence as depicted in their traditions. In the light of the conclusion set forth in the early part of this paper that Zoroaster flourished in the 6th century B.C., coupled with the evidence presented above regarding the close affinity between Achæmenians and the personalities referred to in the Avesta as contemporary of Zoroaster, Vishtāsp the royal patron and disciple of Zoroaster appears to be none else than Vishtāsp the father of Darius the great, from whom comes the first positive inscriptional acknowledgment of the acceptance of the faith in Ahuramazda, the Supreme God of Zoroaster.

### 3. Certain Rigvedic, Avestan and Greek Traditions

If Zoroaster and the *Gāthās* attributed to him belong to the 6th century B.C., it raises the question did the Vedas including certain parts of the *Rigveda* also belong to the same age? Comparative Vedic and Avestan studies have revealed remarkable similarity in the language of the Vedas and the early Avestan literature particularly the *Gāthās*. As Martin Haug observed, "the relationship of the Avesta language to the most ancient Sanskrit, the so-called Vedic dialect, is as close as that of the different dialects of the Greek language (Æolic, Ionic, Doric, or Attic) to each other.

<sup>40</sup> *Modi Memorial Volume*, 1930, p. 200-21.

The language of the sacred hymns of the Brahmans, and of those of the Parsis, are only the two dialects of two separate tribes of one and the same nation. As the Ionians, Dorians, Ætolians, etc., were different tribes of the Greek nation, whose general name was Hellenes, so the ancient Brahmans and Parsis were two tribes of the nation which is called Arya both in the Veda and *Zend-Avesta*.<sup>41</sup> Macdonell also observed that the affinity of the oldest form of the Avestic language with the dialect of the Vedas is so great in syntax, vocabulary, diction, phonetic laws, as whole Avestan stanzas may be transliterated word for word into Vedic, so as to produce verses correct not only in form but in poetic spirit.<sup>42</sup> Giles also notes that, "the dialects of Iran, the language of the earliest *Gāthās* which are attributed to Zoroaster himself, the later dialect of the other surviving parts of the sacred literature of the ancient Persians—the Avesta—and the inscriptions beginning with Darius I about 520 B.C. and best represented in his time but continuing to the last Darius in 338 B.C., are all closely related to the oldest dialect discovered in India, which appears in the hymns of the *Rigveda*. Not only single words and phrases, but even whole stanzas may be transliterated from the dialect of India into the dialects of Iran without change of vocabulary or construction, though the appearance of the words is altered by the changes which time and isolation have brought about between the dialects east and west of Afghanistan."<sup>43</sup> This linguistic similarity naturally suggests that "the coincidence in language between Avesta and the *Rigveda* is so striking as to indicate that the two languages cannot have been long separated before they arrived at their present condition."<sup>44</sup> This similarity extends even to some of the metres used in the Vedas with those of the *Gāthās*. As I. J. S. Taraporevala observes, "The metres of the Avestic *Gāthās* generally correspond to the Vedic metres in their essence. The difficulty in recognising them as such arises on account of two main reasons, the peculiar system of Gāthic spelling and the system of accents in the Avesta."<sup>45</sup>

<sup>41</sup> *Essay on the Religion of the Parsis*, p. 69.

Compare the following remark of Geldner "The *Gāthā* language and the language of the Vedas have a close resemblance, exceeding that of any two Romanic languages: they seem more than two dialects of one tongue. Whole strophes of the *Gāthās* can be turned into good old Sanskrit by the application of certain phonetic laws."

<sup>42</sup> *Vedic Mythology*, p. 7.

<sup>43</sup> *Cambridge History of India*, Vol. I, p. 74.

<sup>44</sup> Berreidale Keith, *Ibid.*, p. 113.

<sup>45</sup> The Eleventh All-India Oriental Conference. *Summaries of Papers*. Compare the following remark of Martin Haug. "Among the metres used in the *Yajurveda*, we find seven marked by the epithet 'asuri'....These Asura metres, so foreign to the whole *Rigveda*, are actually found in the *Gāthā* literature of the *Zend-Avesta*." *Essay*, p. 271.

The similarity in the two lores is not confined to language alone but extends in an equally striking manner to the pantheon, the heroic legends, rituals and ceremonies. For instance, in the Avestan divinities like Mithra, Airyaman, Armaiti, Vayu and Verethraghna we can easily recognise the Vedic deities Mitra, Aryaman, Aramati, Vāyu, Vṛtraha respectively. Corresponding to the Avestan heroic legends of Yima, Thrīta, Kava Us and Kava Hushravah we have the Vedic legend of Yama, Trita, Kavi Uśanā and Suśravas respectively. We may also note the identity of good many terms referring to priestly functions. "The very name for 'priest' in the *Zend-Avesta*, 'āthrava', is to be recognised in the 'atharvan' of the Vedas, by which term a priest of Fire and Soma is meant. The Vedic words 'īṣṭi' (a series of invocations of several deities, accompanied by the offering of the sacrificial cakes, the so-called Puroḍāsha) and 'āhuti' (the invocation of one deity with the offering, within the limits of the 'īṣṭi'), are to be recognised in the 'ishti' and 'āzuti' of the *Zend-Avesta*, where the original peculiar significations are lost, and only the general meanings 'gift' and 'invocation or praise' have survived. The particular names of several officiating priests, at the time of performing a solemn ceremony, are the same in both religions. The 'Hotā', or reciter of the mantras of the *Rigveda*, is identical with the 'Zaota' priest, while the Adhvaryu or managing priest, who has to prepare everything for the Hotā, is the same with the Rathwi (now called Raspi), who is only the servant of the 'Zaota' or chief priest. In the 'Sraoshāvareza', who represents the angel 'Srosh', the Pratiprasthātā of the Brahmanical sacrifices may be recognised, because this priest holds in his hand a wooden sword, during the time of sacrifice, to drive away the evil spirits, which weapon is constantly ascribed to Srosh for the same purpose. In the Atarevakhshō, who has charge of the vessel in which the fire is, we find the Agnīdhra (who holds the fire) of the Brahmins."<sup>46</sup> The most important Vedic ceremony, the Soma sacrifice, is clearly analogous with the Avestan Haoma (= Sanskrit Soma) ceremony. Agreement extends even to the minutest details regarding the nature of the offerings, their preparation, number of chants used, the puritanic discipline obligatory to the sacrificer during the preparatory days, drinking the remnants of the offered cup and so on. The Avestan ceremonies of the Gāhanbārs are similar to the four-monthly sacrifices of the Vedic ritual.

When we put together these striking similarities of language, pantheon, heroic legends, ritual and ceremonies along with the fact that the composers of the Vedas and the Avesta were racially the same people, calling

<sup>46</sup> Martin Haug, *Essay*, p. 280.

themselves Aryas, and they lived in close geographical proximity we have to accept the view that the Avesta, particularly the *Gāthās*, and the Vedas including at least part of the *Rigveda*, belong to one and the same age. It may be, as Martin Haug ably points out, that Zoroaster's monotheism as well as his ethical ideas represented the first great schism which divided his followers from the orthodox followers of the sacrificial creed of the Vedas. With the growing controversies some of the gods of one creed became the demons of the other. This schism was perhaps further deepened as the Indian and the Iranian sections of the Aryans emerged into independent political entities, each professing a separate religion.

In the light of this common origin of the Vedas and the Avesta we can easily recognise the importance of the attempt of Ervad Sheriarji Bharucha,<sup>47</sup> and following him of S. K. Hodivala,<sup>48</sup> to identify certain persons referred to in the Vedas with persons referred to in the Avestan literature as contemporaries of Zoroaster. One of the most striking of their equations is that of Ishtāshva mentioned in the *Rigveda*, with Vishtāsp the royal patron of Zoroaster. The relevant passage of the *Rigveda* runs as follows :

किमिष्टाश्च इष्टरश्मिरेत ईशानासत्तरुष ऋजते नृन् । (1. 122. 13.)

“What can Ishtāshva, (what can) Ishtarashmi (what can) those who are now lords of the earth, achieve (with respect) to the leaders of men, the conquerors of the foes” (Wilson). According to Sāyana the passage signifies, “what can the princes who are named, or any other princes do against those who enjoy the protection of Mithra and Varuna”. As Sāyana suggests Ishtāshva and Ishtarashmi are the names of two kings. These names are not found elsewhere in the Vedas.

A very deep colour is lent to this identification of Ishtāshva and Vishtāsp by the fact that the author of the Rigvedic hymn under consideration is Kakshivat, who being son of Ushij, is also called as Aushij. Apparently the author is here complaining against the oppression of Ishtāshva and Ishtarashmi. Now, as pointed out by Bharucha, in the *Gāthā Ushtavaiti* (Yasna, XLIV. 20) Zoroaster complains of certain persons called Kavis and Karapans, notably those of the family of Usikhsh (comparable to the Vedic Ushij) as the chief opponents of his new religion.<sup>49</sup> As Jackson suggests Usij (Usikhsh) in the Avesta appears to be a proper name.<sup>50</sup> If we accept Ishtāshva as equal to Vishtāsp and Usikhsh as referring to

<sup>47</sup> *Cama Memorial Volume*.

<sup>48</sup> *Zarathushtra and his Contemporaries in the Rigveda*.

<sup>49</sup> Ervad S. D. Bharucha, *Zoroastrian Religion and Customs*, p. 3.

<sup>50</sup> *Zoroaster*, p. 43.



Aushij we have in the *Rigveda* a faint echo of the bitter controversies initiated by the reforms of Zoroaster. The Avestan traditions refer to the religious wars conducted by Vishtāsp. The above Vedic and Avestan references may reflect the feelings engendered by these religious controversies on the two sides.

Bharucha suggests that "as Vishtāsp, when articulated by Greek tongue, became Hystaspes, so pronounced by the Vedic Rishi, it assumed the form of Ishtāshva".<sup>51</sup> As suggested by Hodivala, "some Vedic words beginning with व् and followed by a vowel drop the व् ; for instance in *Rv.*, 5. 41. 2 and 1. 162. 2 the word आयु is said by Sāyana and Mahidhara to be used for वायु. Similarly in *Atharva Veda*, 4. 8. 38 ऋषभ is used for वृषभ. In Persian also we have 'Andariman' used for Avestan 'Vandariman' and 'ila' for Avestan 'Vira' (hero). In colloquial Marathi व् is very commonly dropped; as इष्णु = विष्णु; इराम = विश्वराम."<sup>52</sup> The Iranian 'aspa' termination is the same as Sanskrit 'ashva'. On philological grounds, therefore, there appears to be no difficulty in equating Ishtāshva with Vishtāsp. But the equation by Bharucha and Hodivala of Ishtarashmi with the Avestan Vishtauru and the Persian Gushtam, an ancestor of Vishtāsp, is not convincing.

Now in the light of the conclusion set forth in the previous sections of the paper that Vishtāsp and Zoroaster belong to the 6th century B.C., and that Vishtāsp the royal patron of Zoroaster is Vishtāsp or Hystaspes the father of Darius the great, a surmise may be offered that in Ishtarashmi of the *Rigveda* we may have a reference to Arsames of the Greek writers or Arshama of the Achæmenian inscriptions, who was the father of Hystaspes (Vishtāsp) and the grandfather of Darius the great. As we gather from the inscription of Darius at Bihistūn, Arsames was alive at the time when Darius ascended the imperial throne. In view of the identity of Vishtāsp the royal patron of Zoroaster with Vishtāsp the father of Darius, it can be assumed on the basis of the Avestan traditions that the father of Vishtāsp was also an ardent follower of Zoroaster and took part in the controversies resulting from the emergence of this new creed.

The conclusion that certain Rigvedic hymns refer to the events connected with the Achæmenians induces us to enquire into the tradition preserved in the *Rigveda* concerning Suśravas. In the previous section of this paper we have seen that Kai-Khusrau of the Persian traditions is identical with Cyrus

<sup>51</sup> *Cama Memorial Volume*, p. 4.

<sup>52</sup> *Zarathushtra and his Contemporaries in the Rigveda*, p. 11.

the great. It is well known and almost unanimously suggested by all the Iranian scholars that Kavi Husravah of the Avesta, the glorious uniter of the Aryan race, is Kai-Khusrau of the Persian traditions. Now it has been surmised by many oriental scholars that Husravah of the Avesta is the same as Suśravas of the Vedas. This will lead to the suggestion that Suśravas and Cyrus the great may be the same person. We get the following brief notice of Suśravas in one of the Rigvedic hymns:—

त्वमेताज्जनराज्ञो द्विर्दशाऽबन्धुना सुश्रवसोपजग्मुवः ।

षष्टिं सहस्रा नवति नव श्रुतो नि चक्रेण रथ्या दुष्पदावृणक् ॥ ९ ॥

त्वमाविथ सुश्रवसं तवोतिभिस्तव त्रामभिरिन्द्र तूर्वयाणम् ।

त्वमस्मै कृत्स्मतिथिगवमायुं महे राज्ञे यूने अरन्धनायः ॥ १० ॥

(I. 53. 9 and 10)

9. "Thou, renowned Indra, overthrewest by thy not-to-be overtaken chariot wheel, the twenty kings of men, who had come against Suśravas unaided and their sixty thousand and ninety-nine followers.

10. "Thou, Indra, has preserved Suśravas by thy succour, Tūrvayāna<sup>53</sup> by thy assistance: thou hast made Kutsa, Atithigwa, and Āyu subject to the mighty though youthful (king) Suśravas" (Wilson).

Against this Vedic account of Suśravas let us juxtapose the account of the main achievement of Cyrus the great as we have them from the inscriptions and Herodotus. After his flight from the court of Astyages, the powerful Median monarch, Cyrus in his ancestral home is attacked by the forces of Media. He emerges triumphant against Astyages and annexes Media. He spared the life of Astyages. After this he overthrows Crœsus of Lydia. Though Lydia is won and annexed to the Persian empire Cyrus kindly treats Crœsus, who continues till his last days one of his most intimate and trusted friends. After Lydia, Cyrus overthrows the kingdom of Babylonia. Nabonidus is captured but his life too is spared and he is befriended by Cyrus. Thus Cyrus rising from the humble chieftainship of

<sup>53</sup> "Tūrvayāna" here appears to be an epithet of Suśravas, meaning "of rapid marches" or conquering. We may note that in connection with Rv., 6. 18. 13 "Tūrvayāna" is explained by Sāyana as an epithet of Atithigwa, meaning as 'tvarit-gamnam', of rapid marches. If Tūrvayāna is taken as an epithet of Suśravas, then the verse, 6. 18. 13 may also be taken to refer to the same fact as 1. 53. 10, i.e., Kutsa, Āyu and Atithigwa were made subservient to the great king, Suśravas or Tūrvayāna. Griffith also takes Suśravas and Tūrvayāna as the name of one and the same king. We may note that in the Iranian legends Kava Husravah or Kai-Khusrau is reputed for his conquests of the Turanians. Tūrvayāna in the Rigveda as applied to Suśravas may have some connection with Tūrān of the Iranian legends. According to these legends Kai-Khusrau was the son of the daughter of the Turanian king, whom he subsequently overthrew.

a small vassal state while yet young conquers three of the strongest and the proudest kingdoms of his time, Media, Lydia and Babylonia, and creates the first great Aryan Empire of the ancient world. The lives of the three defeated monarchs are spared and they become subject to Cyrus. We thus find a striking similarity in the main achievements of Cyrus the great and the brief notice of Suśravas we get in the *Rigveda*. Philologically it may not be difficult to equate Atithigwa with Astyages and Kutsa with Cræsus. It is difficult to equate Āyu with Nabonidus.<sup>54</sup>

We may refer to another fact which may suggest that the events mentioned in the *Rigveda* as connected with Suśravas may refer to Cyrus the great. The author of the Rigvedic hymn under consideration is Savya, of the family of Angiras. Dino, who wrote in the 4th century B.C., had reported that one Angares was the most renowned of the minstrels at the court of Astyages. He had predicted the bravery of Cryus and the fall of Astayges.<sup>55</sup> It may be that the Angares who was the minstrel and priest of Astyages later on became also the priest of Cyrus and may be the author of the Rigvedic hymn under consideration. If so, Savya the Angiras would then also belong almost to the same period as Aushij another Vedic Rishi referred to above.

Legends in the *Rigveda* connected with Kutsa may also suggest that the traditions associated with him are similar to those given by Herodotus about Cræsus; and these also may refer to the events of the 6th century B.C. One of these legends is that Indra in some battle in order to protect Kutsa and Etaśa stole the disc of the sun.

यत्रोत बाधितेभ्यश्चक्रं कुत्साय युध्यते । मुषाय इन्द्र सूर्यम् ॥ ४ ॥

यत्र देवो ऋषायतो विश्वो अयुष्य एक इत् । त्वामिन्द्र वरूरहन् ॥ ५ ॥

यत्रोत मर्याय कमरिणा इन्द्र सूर्यम् । प्राज्ञः शचीभिरेतशम् ॥ ६ ॥

(IV. 30. 4, 5 and 6)

"4. In which (contests) for the sake of Kutsa and his allies, thou hast stolen, Indra, the (wheel of the car) of the sun.

"5. In which (contests), thou singly indeed hast warred with all those opposing the gods: thou, Indra, hast slain the malignant.

"6. In which (contests), Indra, thou hast for the sake of a mortal, discomfited the sun, and hast protected Etaśa by (thine) exploits."<sup>56</sup> (Wilson.)

<sup>54</sup> According to the *Zend-Avesta* Kavi Huśrava fought against the Turanian Frangrasyan (Afrasyab) and also fought against and defeated Auravasāra.

<sup>55</sup> *Passages in Greek and Latin Literature relating to Zoroaster and Zoroastrianism*, Fox and Pemberton (Cama Oriental Institute Publication No. 4), p. 25.

<sup>56</sup> This incident also appears to be referred to in the following other Rigvedic hymns: I. 121, 13; II. 19, 4 and 5; V. 29, 5 and 10; V. 31, 11; VI. 15, 5; VI. 31, 3; VIII. 1, 11.

We may detect here, as suggested by Griffith, a reference to a solar eclipse which may have occurred during a battle in which Kutsa and Etaša were involved. Herodotus records a prolonged struggle, lasting for five years 590-585 B.C., between the Median King Cyaxares, father of Astyages, and the Lydian King Alyattes, father of Cræsus. During the thick of one of the battles sun was eclipsed which terrified both the sides and a peace was concluded between the two kings. Cræsus, who had already for some years shared the royal power with his father, may have taken part in these battles alongside his father. We may note the account of Herodotus of this event. "War lasted between the Lydians and the Medes for five years: during this period the Medes often defeated the Lydians and often the Lydians defeated the Medes. In the sixth year when they were carrying on the war with nearly equal success, on occasion of an engagement, it happened that in the heat of the battle, day was suddenly turned into night. This change of the day Thales the Milesian had foretold to the Ionians, fixing beforehand this year as the very period, in which the change actually took place. The Lydians and Medes seeing night succeeding in the place of the day, desisted from fighting, and both showed a great anxiety to make peace" (1, 74). As Herodotus further tells us, peace was made between the two kings, to cement which Alyattes gave his daughter Aryenis in marriage to Astyages, son of Cyaxares. In that year "astromonical authorities are agreed that an eclipse of magnitude sufficient to have constituted the portent implied in Herodotus' story did occur in Asia Minor".<sup>57</sup> It may be surmised that the Rigvedic passages under consideration may refer to this eclipse, in which case we may find in Etaša of the *Rigveda* a reference to Alyattes, father of Cræsus, who has been equated with Kutsa. Philologically it may not be impossible to equate Etaša with Alyattes.<sup>58</sup>

In some of the Rigvedic hymns Kutsa is called as Ārjuneya, son of Arjunī.<sup>59</sup> From the grammatical formation Ārjunī appears to be the name

<sup>57</sup> *Cambridge Ancient History*, Vol. III, p. 512.

<sup>58</sup> We may note that Attys was the name of the sun-god of Lydia. Attys also appears to be a popular name with the kings of Lydia. One of Cræsus' son is also named as Atys. In Alyattes, 'Al' may be a prefix to the name Attys. Alyattes also appears to be a popular name with the princes of Lydia.

<sup>59</sup> त्वं ह त्वदिन्द्र कृतसमावः शुभ्रवमाणस्तन्वा समयै ।

दासे यच्छुष्णे कृत्यं न्यस्मा अरुणाय अर्जुनेयाय शिक्षन् ॥ २ ॥ VII. 19. 2.

Aiding him with thy person, Indra, thou hast defended Kutsa in combat when thou hadst subjugated Dasa, Śuṣṇa and Kuyava, giving (the spoil) to that son of Arjunī (Wilson).

Sāyana explains अर्जुनेयम् as अर्जुन्याः पुत्रं and suggests that it refers to Kutsa.

Kutsa is called as the son of Arjunī also in the following other Rigvedic verses : I. 112, 23 ; IV. 26, 1 and VIII. 1, 11

of Kutsa's mother. We may note that Aryenis, in which name it may not be difficult to recognise the Vedic form Ārjuneyi or Ārjunī, was the name of Cræsus' sister, who as seen above, was married to Astyages. Name of Croesus' mother is not known from the Greek accounts, which only tell us that she was a Carian. If Cræsus is the same as Kutsa, Ārjuneya as applied to the brother in the Vedic traditions and Aryenis to the sister in the Greek accounts may have reference to the name of their mother.

Herodotus has recorded the traditions of the extensive conquests of and also of the fabulously great wealth possessed by Cræsus, whose name had stood as synonym of riches through all the centuries since he lived. In the *Rigveda* Kutsa appears to be a special favourite of Indra; the following Rigvedic tradition seems to suggest that Kutsa also possessed great riches:

प्रान्यच्चक्रमवृहः सूर्यस्य कुत्सायान्यद् वरिषो यातवेऽकः । (V. 29. 10) \*

“Thou hast formerly detached one wheel (of the car) of Surya (sun): another thou hast given to Kutsa wherewith to acquire wealth.” (Wilson)

We have another Rigvedic legend about Kutsa which may recall the traditions about Cræsus recorded by Herodotus.

तव त्व इन्द्र सख्येषु बह्व्य ऋतं मन्वाना व्यदर्दिरुर्वलम् ।

यत्रा दशस्यनुषसो रिणक्षपः कुत्साय मन्मन्त्राश्च दंसयः ॥ (X. 138. 1)

“Allied with thee in friendship, these thy priests, remembering Holy Law, rent Vritra limb from limb,  
When they bestowed the Dawns and let the waters flow, and  
When thou didst chastise dragons at Kutsa's call.” (Griffith)

In this legend we may have reference to Kutsa being saved by a timely burst of rain from the clouds. Herodotus records about Cræsus that when he was captured by Cyrus, bound with fetters he was placed on a heap of a great pile to which fire was set. Meanwhile Cyrus having pardoned him commanded the fire to be instantly extinguished, but in spite of the best endeavours the fire could not be mastered. Herodotus further notes, “It is related by the Lydians, that Cræsus, perceiving that Cyrus had altered his resolution, when he saw every man endeavouring to put out the fire, but unable to get the better of it, shouted aloud, invoking Apollo, and besought him, if any of his offerings had been agreeable to him, to protect and deliver him from the present danger: they report that he with tears invoked the god, and that on a sudden clouds were seen gathering in the air, which before was serene, and that a violent storm burst forth and vehement rain fell and extinguished the flames” (1, 87). Cræsus was saved and

he became one of the most trusted friends of Cyrus. We may not believe in all the details of the story of the escape of Cræsus from the flames as given by Herodotus. But the truth underlying it seems to be that Cræsus had a providential escape, may be from the sudden downpour of rains as he sat on the burning pyre either condemned by Cyrus, or more likely in an attempt to self-immolation on his defeat.

We have another oft repeated legend in the *Rigveda* about Kutsa. This legend refers to the destruction of Śuṣṇa, called an Asura by the commentators, by Indra for the protection of Kutsa.<sup>60</sup> If Cræsus and Kutsa be the same person, it may be surmised that Śuṣṇa may refer to Syennesis, King of Cilicia, which bordered on Cræsus' dominions. According to Herodotus (I. 74) Syennesis was one of the two mediators in the battle between Cræsus' father Alyattes and the Median King Cyaxares, during which, as already referred to above, the eclipse occurred. May be that Cræsus in course of his conquests came in conflict and may have worsted Syennesis. In certain Rigvedic hymns<sup>61</sup> the term 'Kuyava' is used side by side with Śuṣṇa. Sâyana explains it also as an Asura destroyed by Indra for the benefit of Kutsa. It is however possible that Kuyava is an epithet of Śuṣṇa. In the Assyrian records Kue is the name of Cilicia.<sup>62</sup> If Śuṣṇa and Syennesis are the same, it may be surmised that Kuyava as an epithet of Śuṣṇa was perhaps derived from Kue, the country over which he ruled.

As regards Atithigwa, who, as shown above, may be same as Astyages, there is a recurring legend in the *Rigveda*, which says that for his benefit Indra destroyed Śambara and demolished Śambara's numerous cities. We may quote some of the Rigvedic passages containing this legend, as they may throw, if our surmise is correct, new light on the confused history of this period.

त्वं कुत्सं शुष्णहृत्पुष्पाविधाऽरन्ध्रयोऽतिथिगवाय शम्बरम् ।

महान्तं चिद्वुदं नि कमीः पदा सनादेव दस्युहत्याय जज्ञिषे ॥ ६ ॥ (I. 51. 6)

"Thou (Indra) hast defended Kutsa in fatal fights with Śuṣṇa, thou hast destroyed Śambara in defence of Atithigwa; thou hast trodden with

<sup>60</sup> Rigvedic Hymns, I, 51, 6; I. 63, 3; I. 121, 9; II. 19, 6; IV. 16, 12; V. 29, 9; VII. 19, 3; VIII. 85, 17.

<sup>61</sup>

त्वं कुत्सेनाभि शुष्णमिन्द्राऽशुषं युध्य कयवं गविष्टौ ।

दश प्रपित्वे अथ सूर्यस्य मुषायश्चक्रमविधे रपांसि ॥ ३ ॥ (VI. 31. 3)

Thou Indra, with Kutsa, hast warred against the inexhaustible Śuṣṇa; thou hast overthrown Kuyava in battle : in conflict thou hast carried off the wheel (of the chariot) of the sun; thou hast driven away the malignant (spirits) (Wilson).

Also compare *Rigveda*, IV. 16, 12 and VII. 19, 2.

<sup>62</sup> *Cambridge Ancient History*, Vol. III, p. 357.

thy foot upon the great Arbuda : from remote times wast thou born for the destruction of oppressors." (Wilson)

भिनत् पुरो नवतिभिन्द्र पूरवे दिवोदासाय महि दाशुषे नृतो वज्रेण दाशुषे नृतो ।

अतिथिग्वाय शम्बरं गिरेरुग्रो अवाभरत् ।

महो धनानि दयमान भोजसा विश्वा धनान्योजसा ॥ ७ ॥ (I. 130. 7)

"For Puru, the giver of offerings, for the mighty Divodāsa, thou, Indra, the dancer (with delight in battle), hast destroyed ninety cities; dancer (in battle), thou hast destroyed them with (thy thunderbolt), for (the sake of) the giver of offerings. For (the sake of) Atithigwa, the fierce (Indra) hurled Śambara from off the mountain, bestowing (upon the prince) immense treasure, (acquired) by (his) prowess; all kinds of wealth (acquired) by (his) prowess." (Wilson)

दिवोदासाय नवति च नवेन्द्रः पुरो व्यैरच्छम्बरस्य ॥ ६ ॥ (II. 19. 6)

"For the sake of Divodāsa (Indra) demolished the ninety-nine cities of Śambara." (Wilson)

अहं पुरो मन्दसानो व्यैरं नव साकं नवतीः शम्बरस्य ।

शततमं वेदयं सर्वताता दिवोदासमतिथिग्वं यदावम् ॥ ३ ॥ (4. 26. 3)

"Exhilarated (by the Soma beverage) I (Indra) have destroyed the ninety-nine cities of Śambara; the hundredth I gave to be occupied by Divodāsa when I protected him, Atithigwa, at his sacrifice." (Wilson)

उत दासं कौलितरं बृहतः पर्वतादधि । अवाहमिन्द्र शम्बरम् ॥ १४ ॥

शतमश्मन्यमीनां पुरामिन्द्रो व्यास्यत् । दिवोदासाय दाशुषे ॥ २० ॥ (4. 30. 14 and 20)

14. "Thou hast slain the slave Śambara, the son of Kulitara, hurling him from the huge mountain.

20. "Indra has overturned a hundred stone-built cities for Divodāsa, the donor of oblations." (Wilson)

त्वं कवि चोदयोऽर्कसातौ त्वं कुरसाय शुष्णं दाशुषे वर्क ।

त्वं शिरो अमर्मणः पराहृजतिथिग्वाय शंस्यं करिष्यन् ॥ ३ ॥

त्वं तदुक्थमिन्द्र बर्हणा कः प्र यच्छता सहस्रा शूर दर्वि ।

अव गिरेर्दासं शम्बरं हन् प्रापो दिवोदासं चित्राभिरूती ॥ ५ ॥

वयं ते अस्ममिन्द्र शुभ्रहूतौ सखायः स्याम माहिन प्रेष्ठाः ।

प्रातर्दनिः क्षत्रध्रीरस्तु श्रेष्ठो घने वृत्राणां सनये धनानाम् ॥ ८ ॥

(VI. 26, 3, 5 and 8)

3. "Thou hast cut to pieces Śuṣṇa for Kutsa, the donor of the oblation: thou hast struck off the head (of Śambara), imagining himself invulnerable, intending to give pleasure to Atithigwa.

5. "Indra, who art the subduer (of foes) thou hast achieved a glorious (deed) inasmuch as thou hast scattered, hero the hundreds and thousands (of the host of Śambara), hast slain the slave Śambara (when issuing from the mountain) and hast protected Divodāsa with marvellous protection.

8. "May we, adorable Indra, thy friends, at this thy worship, offered for (the acquirement of) wealth, be held most dear to thee: may (my patron) Kshatrashri, the son of Pratardana, be most illustrious through the destruction of foes and attainment of riches." (Wilson)

त्वं शतान्यव शम्बरस्य पुरो जघन्थाप्रतीनि दस्योः ।

अशिक्षो यत्र शक्त्या शचीवो दिवोदासाय सुन्वते सुतके भरद्वाजाय गृणते वसूनि ॥ ४ ॥

(VI. 31, 4)

"Thou hast destroyed the hundred impregnable cities of the Dasyu Śambara, when, sagacious Indra, thou, who art brought by the libation, hast bestowed in thy liberality riches upon Divodāsa presenting to thee libations, and upon Bharadwāja hymning thy praise." (Wilson)

पुरुणि यश्च्यौला शम्बरस्य वि नवतिं नव च देह्योऽहन् ॥ २ ॥ (VI. 47, 2)

"And he (Indra) has destroyed the numerous hosts of Śambara and the ninety-nine cities."<sup>63</sup> (Wilson)

Putting these various references together we gather that Atithigwa won a great victory over Śambara. Śambara's numerous cities, mentioned variously as ninety, ninety-nine or hundred, were destroyed. If our surmise that Atithigwa is Astyages be true, may we not have here a reference to the overthrow of Assyria and the complete destruction of Nineveh and other ancient Assyrian cities at the hands of the Medians in combination with the Babylonians? This is more than a mere conjecture. Assyria seems to have been referred to as 'Subarum' in the following record of Nabopolassar the Babylonian King who took part in the overthrow of Assyria. "By the word of Nabu and Marduk, who favour my sovereignty, and by the great, raging weapons of Girra<sup>64</sup> the terrible, who scatters my foes, I conquered Subarum and turned its land to ruin."<sup>65</sup> It may not be difficult to recognise Śambara in Subarum. If so, then in the Rigvedic tradition destruction of the Asura Śambara and his cities may refer to the defeat of the

<sup>63</sup> The following Rigvedic hymns also refer to the destruction of Śambara and his numerous cities: I. 54, 4 and 6; I. 101, 2; I. 103, 8; I. 112, 14; II. 14, 6; V. 29, 6; VII. 19, 5; VII. 99, 5; IX. 61, 1 and 2; X. 49, 8.

<sup>64</sup> Does Girra here refer to Indra? Girvah, Girvan, etc., are used in the Vedic literature (e.g., Rv., VI. 24, 6) as epithets of Indra.

<sup>65</sup> *The Cambridge Ancient History*, Vol. III, p. 207.



last Assyrian monarch and the destruction of Nineveh and other Assyrian towns.<sup>66</sup> We may further surmise that Arbuda (*Rig.*, I. 51, 6), mentioned along with Śambara and also taken by Sāyana as an Asura, may be Arbela a very important ancient town of Assyria. In Kulitara as applied to Śambara (*Rig.*, 4. 30, 14), taken by Sāyana as the name of Śambara's father, we may have a reference to Calah, another very important town in Assyria which was the seat of the ancient kings of Assyria. May we not also detect in Navati-nava or ninety-nine cities of Śambara a reference to Nineveh?<sup>67</sup> We know that many ancient towns including the famous Nineveh were utterly destroyed and razed to the ground when Assyria went down under the assaults of the Medians.

Now it is a mooted question whether the fall of Assyria and the destruction of Nineveh occurred in the time of the Median king Cyaxares or his son Astyages. The Greek historians put it in the reign of Cyaxares. But Berosus, the Babylonian author who wrote in the 4th century B.C., and the authors who follow him put the event in the time of Astyages.<sup>68</sup> The truth may be that this event occurred during the reign of Cyaxares but the final battles against Assyria were conducted by his son Astyages. If Astyages is the same as the Rigvedic Atithigwa and the destruction by the latter of Śambara may refer to the downfall of Assyria, then the Rigvedic tradition will support the view that Astyages was the victor of Assyria. Further it may be noted that the Rigvedic hymn VI. 26 quoted at some length above, composed by Bharadvāja (of the family of Angiras) appears to be a contemporary record of this event. This is evidenced by hymn VI. 31. 4 (quoted above) composed by Suhotra a descendant of Bharadvāja; according to this hymn Bharadvāja appears to have received liberal gifts when Divodāsa demolished Śambara. This will make Atithigwa Divodāsa a contemporary of Kshatrashri, the patron of Bharadvāja, the author of hymn VI. 26. Kshatrashri may then be equated with Cyaxares (Huvakshatara), the father of Astyages, whom we have identified with Atithigwa. The hymn gives the name of Kshatrashri's father as Pratardana, in whom we may recognise Phraortes, father of Cyaxares. The Brāhmaṇas mention

<sup>66</sup> This took place about 606 B.C. Sin-shar-ishkun, who was perhaps a son of Ahsurbanipal, perished along with the fall of Nineveh. Classical traditions suggest that Sardanapalus was the last Assyrian king in whose reign the tragedy occurred. But the Assyrian history as now reconstructed does not bear this out.

<sup>67</sup> It may be noted that Nineveh comes very near Ninyānvé, which in some modern Indian languages is the expression for ninety-nine. It is not improbable that Navati-nava may be the sanskritised form of Nineveh and poetically it may have symbolised the many towns which were destroyed along with it.

<sup>68</sup> *Historians' History of the World*, Vol. I, p. 444.

perhaps the same Pratardana as a descendant of Divodāsa; according to *Kaushītaki Upanishad* he met his death in battle.<sup>69</sup> We know from Herodotus that Phraortes, son of Deioces, perished in the war against Assyria (I. 102). Hostilities between Media and Assyria continued in the time of Phraortes' son, Cyaxares, and it was towards the close of Cyaxares' reign that the Median forces, perhaps under the command of Astyages, as suggested above, overthrew Assyria. It appears that the epithet Divodāsa applied to Atithigwa is a patronymic; and we may equate Divodāsa with Deioces the founder of the Median dynasty, who was the great-grandfather of Asytages. Rigvedic hymn (I. 30, 7) may even suggest that this family was an offshoot of the Puru dynasty.

We may sum up the identifications suggested above.

*Median Kings*

*Rigveda*

Divodāsa  
|  
Pratardana  
|  
Kshatrashri  
|  
Atithigwa

*Herodotus and other Greek sources*

Deioces  
|  
Phraortes (Fravartish)  
|  
Cyaxares (Huvakshatra)  
|  
Astyages (Ishtuvegu)

*Persian Kings*

Suśravas (Av. Husravah)  
|  
Ishṭarashmi  
|  
Ishṭāshva (Av. Vishtāsp)

Cyrus the great  
|  
Arasmes  
|  
Hystaspes

*Lydian Kings*

Etāsa  
|  
Kutsa

Alyattes  
|  
Cræssus

<sup>69</sup> *Cambridge History of India*, Vol. I, p. 120. Mention is made of Pratardana in the *Kaushītaki Brāhmaṇa*, XXVI, 5.

The following verse of the *Mahābhārata* mentions a king Pratardana as the son of Uṣḍaśva.

यदृष्टं प्रव्रवीमीद सत्यं प्रतर्दनं चौषदश्चिव तथैव ।

सर्वे च लोका मुनयश्च देवाः सत्येन पूज्या इति मे मनोगतम् ॥ २६ ॥ आदि. 93.

One wonders if Uṣḍaśva may be the same as Greek Deioces, and his son Phraortes may then be the same as Pratardana. *Mahābhārata*, XIII. 30 again mentions Pratardana, son of Divodāsa, as a king of Kashi. But we may note that the Vedic texts do not connect these kings with Kashi.

The following equations have also been surmised :

Āyu	.. Nabonidus (King of Babylon) ?
Śuṣṇa	.. Syennesis (King of Cilicia)
Śambara	.. Subram (the Assyrian Kingdom)

The suggestions offered in this paper bring us to the conclusion that certain hymns of the *Rigveda* belong to the 6th century B.C. to which Zoroaster and his *Gāthās* so closely related to the Vedic lore also belong. We have further seen that the Vedas and the Avesta alike seem to refer to certain persons and events of this time. This will lend support to the contention of scholars like Johannes Hertel that the Avesta may provide evidence of great weight in estimating the date and the place of composition of the *Rigveda*; and that both the *Rigveda* and the *Avesta* are in a large measure the product of the 6th century B.C.<sup>70</sup> We may further suggest that the account left by Herodotus and other early Greek writers of the ancient kingdoms and dynasties of central and western Asia as well as the Babylonian and Assyrian records may also throw valuable light on the historical traditions preserved in the *Rigveda*.

If we assign some Rigvedic hymns to the 6th century B.C., others will have to be assigned to the centuries preceding the sixth and some others to the subsequent centuries, as the hymns themselves not unfrequently avow a difference of date, some are ascribed to the earlier Rishis, while others admit of their being new composition. It appears that until we come to the schism initiated in the 6th century B.C. by the reforms of Zoroaster, *Rigveda*, which seems to be essentially the product of the minstrels and priests attached to the royal courts, referred to the events and traditions common to the Aryans in north-western India, Persia, Media, Lydia<sup>71</sup> and other adjoining places conquered by them. This schism deepened when under Darius the great and his successors Zoroastrianism was adopted as the state religion of the Achæmenian empire, which, as it expanded, came more and more in conflict with the Indian and other eastern sections of the Aryans. These religious differences coupled with the political animosities created a big gap between the Iranian section on the one hand and the Indian and other more

<sup>70</sup> Johannes Hertel in 'Die Zeit Zoroastres' suggests that the period of Zoroaster's activity fell about 550 B.C. On grounds different than those advanced in this paper, he further suggests that the *Rigveda* was in large measure contemporaneous with the *Avesta*.

<sup>71</sup> That the influence of Indo-Aryan traditions in western Asia is much earlier than the sixth century B.C. is to be seen from the fact that the inscriptions discovered at Boghaz-köi in North-Eastern Asia Minor and attributed to the 14th century B.C. refer to the Vedic deities Mitra, Varuna, Indra and Nāsatyas.

orthodox sections of one and the same people. There is, therefore, no wonder that if we recognise in the Vedic Suśravas and the Avestan Husravah references to Cyrus the great,<sup>72</sup> this mighty ruler is the last hero common alike to the *Rigveda* and the *Avesta*. After him the Vedic records reflect more and more the life and traditions of the eastern particularly the Indian sections of the Aryans. There may be a great deal of weight in the suggestions of Hüsing<sup>73</sup> and Halevy<sup>74</sup> that some of the Rigvedic hymns may refer to the period of the Parthian and the Saka kings of India.

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<sup>72</sup> In another paper, "Cyrus the Great and the Battle of the Mahābhārata" (*Nagpur University Journal*, No. 6), we have suggested that the battle which Cyrus fought towards the end of his life against the Indians and their allies and his defeat in this battle formed the original nucleus round which the *Mahābhārata* epic grew up.

<sup>73</sup> *Die Inder von Boghaz-köi*.

<sup>74</sup> *Considerations critiques sur quelques points de l'histoire ancienne de l'Inde*.

## NEW LIGHT ON THE HISTORY OF THE PARAMĀRA DYNASTY

BY MAHAMAHOPADHYAYA PROF. V. V. MIRASHI, M.A.

It is well known that there was a crisis in the history of the Paramāra dynasty at the time of the death of Bhoja, the illustrious ruler of Mālwa.<sup>1</sup> Karna, the mighty Kalacuri king of Dāhala, allied himself with the Caulukya king Bhīma of Gujarat. The allied forces invaded Mālwa from the east and the west and capturing the capital Dhārā, dethroned Jayasimha, the successor of Bhoja. In this emergency Jayasimha solicited the aid of the Cālukya king Someśvara I—Āhavamalla of the Deccan and the latter, forgetting his hereditary hostility with the Paramāra family, sent his son Vikramāditya VI to Jayasimha's aid.<sup>2</sup> Vikramāditya turned back the invaders and reinstated Jayasimha. The Māndhātā plates<sup>3</sup> of Jayasimha show that he was firmly established on the throne in A.D. 1055.

About fifteen years later Karna again invaded Mālwa. The political situation in the Deccan had considerably changed in the mean while. Āhavamalla was dead and was succeeded by his eldest son Someśvara II. The latter was, however, apprehensive of his ambitious younger brother Vikramāditya VI and therefore must have readily allied himself with the powerful Kalacuri Emperor Karna and helped him in his invasion of Mālwa. This time the allied arms attained greater success. The Nagpur Museum stone inscription<sup>4</sup> very graphically describes in verse 32 the terrible disaster that befell the Mālwa country at the time. The inscription has been edited by Prof. Kielhorn who read the verse as follows:—

तस्मिन्वासव(ब)न्धुतामुपगते राज्ये च कुल्याकुले  
ममस्वामिनि तस्य व(ब)न्धुदयादित्योभवद्भूपतिः ।  
येनोद्धृत्य महार्णवोपममित्कर्णटिकर्णप्र[भु]-  
मुखीपालकदर्शितां भुवमिमां श्रीमद्वराहायितम् ॥

Kielhorn translates this verse as follows:—‘When he (i.e., Bhoja) had become Indra's companion and when the realm was overrun by floods in which its

<sup>1</sup> Merutuṅga's *Prabandhacintāmaṇi* places the invasion towards the end of Bhoja's reign, but the Udaipur *prāśasti* and the Nagpur Museum stone inscription say that the troubles started after the death of Bhoja.

<sup>2</sup> *Vikarmāṅkadevacarita*, canto III, verse 67.

<sup>3</sup> *Epigraphia Indica*, Vol. III, p. 46 ff.

<sup>4</sup> *Ibid.*, Vol. II, p. 180 ff.

sovereign was submerged, his relation Udayāditya became king. Delivering the earth which was troubled by kings and taken possession of by Karna, who joined by the Karnaṭas, was like the mighty ocean, this prince did indeed act like the holy Boar.<sup>1</sup>

The expression *rājye ca kuly-ākule* is significant. Besides the meaning given by Kielhorn, it signifies another, viz., that the kingdom was in a state of disturbance owing to the risings of the scions of the (Paramāra) family. Even though Jayasīṃha ascended the throne with the help of the Cālukya king, it seems that there were some members of the Paramāra family (*kulyās*) who did not acquiesce in it. It is not known how Jayasīṃha was related to Bhoja. In his records he, no doubt, describes himself as meditating on the feet of Bhoja, but this does not necessarily indicate that he was his son. Perhaps he was his brother as conjectured by Dr. Altekar.<sup>2</sup> In that case there may have been other members of the Paramāra family who thought that they had an equal or even a better claim to the throne. So long as Jayasīṃha had the support of the powerful Cālukya Emperor Someśvara I—Āhavamalla, they could not do anything, but on the death of the Emperor, they must have risen in revolt. Perhaps these risings were fomented by the ambitious Kalacuri Emperor Karna who had so far been foiled in his attempt to annex Mālwā. When he found that the Mālwā kingdom was torn by civil war, he made his alliance with Someśvara II, the son of Āhavamalla and invaded Mālwā. This invasion is described in the third *pāda* of the verse cited above. Kielhorn's reading of it given above is open to two objections: firstly, it does not make the final syllable *bhu* (of *prabhu*) in third *pāda* prosodially long as required by the metre<sup>3</sup> and secondly with that reading the compound cannot be dissolved satisfactorily. Kielhorn evidently took it to mean महावर्णवोपमः मिलत्कर्णाटः कर्णः प्रभुः यस्याः तां (भुवम्), but the dissolution is not quite satisfactory. Besides, Kielhorn was not quite sure of the reading *prabhu*—His edition of the inscription was not accompanied by a facsimile, but Mr. C. V. Vaidya very ingeniously suggested the reading *prabhṛty-urvvīpāla*<sup>4</sup>—This suits the metre and yields a better sense. Besides, on referring to the original stone in the Nagpur Museum I find that it is the correct reading of the particular portion. The expression must therefore be dissolved as महावर्णवोपमं मिलन्तः कर्णाटककर्णप्रभृतयः उर्व्वीपालाः तैः कदधितां (भुवम्). It would mean that Udayāditya rescued the earth which was oppressed by

<sup>1</sup> *Epigraphia Indica*, Vol. XXIII, p. 132 ff.

<sup>2</sup> The syllable will of course be long if we read *prabhuṃ*, but as the rules of *sandhi* have to be observed within a hemistich, the final *m* of *prabhuṃ* must be joined to the initial *u* of *urvvīpāla* in the next *pāda*.

<sup>3</sup> *History of Medieval Hindu India*, Vol. III, pp. 169–70, n.

Karṇāṭa, the king Karṇa and other rulers who had swept over it from different sides like mighty oceans. This reading of the third *pāda* shows that Mālwa was invaded at that time by a confederacy of more than two kings.

A stone inscription recently discovered corroborates this reading of the verse and sheds new light on some other events of Mālwa history. The record is incised on the architrave of dilapidated old temple of Śiva at Doṅgar-gaon in the Yeotmal District of Berar. It belongs to the reign of Jagaddeva, a son of Udayāditya and is dated in Śaka 1034 (A.D. 1112). After describing Bhoja the inscription says about Udayāditya—

ततो रिपुत्रयस्कन्दैर्ममो मालवमेदिनीम् । उद्धरमुदयादित्यस्तस्य भ्राता व्यवर्द्धत ॥

This verse clearly shows that at that time Mālwa was invaded by a confederacy of three kings. It thus corroborates the reading of the third *pāda* of verse 32 of the Nagpur Museum stone inscription noticed above.

Who were these three invaders of Mālwa? The Nagpur Museum stone inscription specifically names Karṇa as one of them, Kielhorn identified him with the homonymous Kalacuri king who was a contemporary of Udyāditya. Latterly the view has been advanced that he was the Caulukya king Karṇa of Gujarat, the successor of Bhīma.<sup>8</sup> This view does not appear to be correct. Some late Sanskrit works no doubt state that the Caulukya Karṇa defeated a king of Mālwa<sup>9</sup>, but they do not state that the latter was Jayasimha. Kalacuri inscriptions also are silent about this event, but that is because they nowhere give a detailed account of Karṇa's conquests. The recently discovered Rewah stone inscription of the time of Karṇa<sup>10</sup> also does not mention it though it describes Karṇa's campaigns against other kings, but that is evidently because the event occurred long after A.D. 1048-49 which is the date of that inscription. Karṇa's extermination of the royal family of Mālwa is however mentioned in an Apabhramśa verse<sup>11</sup> cited in the *Piṅgarlārthapradīpa* to which Dr. Sir R. G. Bhandarkar drew attention long ago. Besides, the latter part of the Udayapur *prasaṁsī* which has recently come to light states that Udayāditya inflicted a crushing defeat on the lord of Dāhala.<sup>12</sup> This shows that the king Karṇa who was responsible for the destruction of Jayasimha was the Kalacuri, not the Caulukya, king.

<sup>8</sup> D. R. Bhandarkar, *List of Inscriptions of Northern India*, p. 291, n. 4; D. C. Ganguli, *History of the Paramāra Dynasty*, p. 130.

<sup>9</sup> Viz., *Prthvirājaviṣṇu*, canto V; *Sukṛtasāṅkīrtana*, canto II, verse 23.

<sup>10</sup> *Ep. Ind.*, Vol. XXIV, p. 134 ff.

<sup>11</sup> दणु उज्जरगुज्जरराजदलं दलदलिवलिअमरहट्टबलं ।

बलमालिअमालवराजकुला कुल उज्जल करचुलिकण कुला ॥

<sup>12</sup> *Annual Report of the Archaeological Department of the Gwalior State for 1925-26*, p. 13.

The Karnāṭa king was evidently Someśvara II, of the later Cālukya Dynasty. The Sūḍi stone inscription dated Śaka 996 (A.D. 1075) mentions this Cālukya king as a blazing fire to the ocean that is the race of the Mālavayas. This suggests that Someśvara deposed and perhaps killed Jayasimha and some other members of the Paramāra family.

Karṇa and Someśvara II were, however, only the prominent members of the confederacy as stated in the Nagpur Museum stone inscription. There were other kings allied with them. The Ḍoṅgaragaon inscription states that the invaders were three in number, but it does not name them. The third prominent member was probably the Western Gaṅga king Udayāditya. From several records in the Kanarese country we know that this Udayāditya and his feudatory, the valiant Hoysala prince Eṛeyaṅga joined Someśvara in his attack on Mālwā. Eṛeyaṅga, in particular, is said to have trampled down the Mālava army, plundered the Mālava king's hill fort and burnt and devastated Dhārā.<sup>13</sup>

Jayasimha succumbed to this attack and for a time it seemed as if the Paramāra kingdom had been completely wiped out. The terrible disaster that befell the Mālava country at this time is graphically described in the Nagpur Museum stone inscription which likens it to the catastrophe of world destruction when mighty oceans sweep over and submerge the earth. In this hour of need Udayāditya rose to the occasion. He routed the enemy's forces and rescued the Mālava country, just as the Primeval Boar had uplifted the earth at the time of *pralaya*.

The verse cited above from the Ḍoṅgaragaon inscription is important in another respect also. It calls Udayāditya the brother (*bhrātā*) of Bhoja. This is the first record in which the relationship of Udayāditya to Bhoja is so clearly stated. Some Paramāra inscriptions describe Udayāditya as meditating on the feet of Bhoja, but they do not state how he was related to Bhoja. The Nagpur Museum inscription has indeed been known for a long time to refer to Udayāditya as a *bandhu* of Bhoja, but as *bandhu* signifies in Sanskrit the sense of a distant relative as well as that of a brother, Udayāditya was supposed to be remotely related to Bhoja. The Jainad stone inscription<sup>14</sup> of Jagaddeva's reign mentions Bhoja as the *pitṛvya* (uncle) and Udayāditya as the father of Jagaddeva, but as a stone inscription at Udayapur<sup>15</sup> gives an altogether different genealogy for Udayāditya from that

<sup>13</sup> See Ganguly, *History of the Paramāra Dynasty*, pp. 128-29.

<sup>14</sup> *Ep. Ind.*, Vol. XXIII, p. 132 ff.

<sup>15</sup> *J. A. S. B.*, Vol. IX, p. 649.



of Bhoja, viz., that he was the son of Gyātā, grandson of Goṇḍala and great-grandson of Sūravīra of the Paramāra dynasty, it is supposed that Udayāditya belonged to a minor branch of the family and was a distant cousin of Bhoja.<sup>16</sup> The Ḍoṅgargaon inscription which uses the word *bhrātā* to indicate the relationship leaves no doubt that Udayāditya was Bhoja's real brother. The statment in the Udayapur inscription which is a very late record, has to be rejected in view of the testimony of three very early documents, viz., the Nagpur Museum, Jainad and Ḍoṅgaragaon inscriptions.

The Ḍoṅgaragaon inscription contains another important statement to which we may now turn. After eulogizing Udayāditya the inscription says:—

तस्य सत्स्वपि पुत्रेषु स्वसम्मत्तसुतैषिणः । ह्यराधनतो जज्ञे जगद्देवो महीपतिः ॥

दिवं प्रयाते पितरि स्वयं प्राप्तामपि श्रियम् । परिवर्तिभयात्यक्त्वा योऽग्रजाय न्यवेद्यत् ॥

These verses show that though Udayāditya had several sons, he longed to have one more after his heart. He therefore devoutly prayed to Śiva and by the god's favour, obtained the son Jagaddeva. After Udayāditya's death Royal Fortune offered herself to Jagaddeva, but he, being afraid of incurring the sin of *parivitti* (i.e., marrying before an elder brother), renounced her in favour of his elder brother. Two other sons of Udayāditya are known from inscriptions, viz., Lakshmadeva and Naravarman, who succeeded him one after the other. Jagaddeva is mentioned in certain Hoysaḷa records<sup>17</sup> as the king of Mālwa. As his name is not mentioned in other Paramāra inscriptions, he is supposed to be identical with Lakshmadeva whom the Nagpur Museum inscription mentions as the son and successor of Udayāditya. The Ḍoṅgaragaon inscription, however, makes it clear that Jagaddeva was different from both Lakshmadeva and Naravarman and that though he could have ascended the throne of Mālwa, he relinquished it in favour of his elder brother Lakshmadeva.

Jagaddeva was probably the youngest son of Udayāditya. The description in the aforecited verses of the Ḍoṅgaragoan inscription suggests that he was a favourite son of his father and was nominated by him as his successor. According to the *Rās Mālā*, Udayāditya had two wives, one of the Wāghelā clan and the other of the Soḷaṅki. The former bore to him a son named Raṇadhavala and the latter Jagaddeva. Raṇadhavala was the elder son and the heir-apparent. Jagaddeva was younger by two years. As Udayāditya was completely under the influence of Raṇadhavala's mother who ill-treated Jagaddeva, the latter left Mālwa and took service under Siddharāja

<sup>16</sup> *Ep. Ind.*, Vol. XXII, p. 56.

<sup>17</sup> See, e.g., *Epigraphia Carnatica*, Vol. II, p. 166.

Jayasimha of Gujarat. He served him for eighteen years, but when he came to know that Siddharāja was planning an invasion of Mālwa, he returned to his native country where he was affectionately welcomed by his father who nominated him as his successor. After his father's death, Jagaddeva ascended the throne of Mālwa and ruled for fifty-two years.<sup>18</sup>

The foregoing account of the Gujarat bards cannot of course be accepted in its entirety, but it is to a certain extent corroborated by the Ḍoṅargaon inscription. The tenour of the description in the verses quoted above suggests that Jagaddeva was a half-brother of Lakshmadeva who perhaps bore the *biruda* Raṇadhavala. He seems to have been nominated by Udayāditya as his successor, but the Ḍoṅargaon inscription leaves no doubt that he never ascended the throne of Mālwa.

The Ḍoṅargaon inscription has thus shed important light on the history of the Paramāra dynasty subsequent to the death of Bhoja.

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<sup>18</sup> *Ras Mala* edited by H. G. Rawlinson, Vol. I, p. 117 ff.

# PAISĀCĪ TRAITS IN THE LANGUAGE OF THE KHAROŠTHĪ INSCRIPTIONS FROM CHINESE TURKISTAN

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THE discovery of a very large number of inscriptions from the arid sands of Chinese Turkistan by Sir Aurel Stein early in this century was an event of first rate importance in the field of epigraphy. No less than seven hundred and sixty-four of these ancient documents have since been edited by Messrs. Boyer, Rapson and Senart, and published in one volume.<sup>1</sup> They have since received very close attention of some scholars and valuable information bearing upon the ancient history of the land has been brought to light. What has particularly interested the scholars is the language of those documents, and a series of articles has appeared on the subject.<sup>2</sup> The language has been dealt with more or less thoroughly by Mr. T. Burrow in his book "*The Language of the Kharoṣṭhī Documents from Chinese Turkistan*."<sup>3</sup> The position that emerges from these treatments is that "The language of those documents was used for official purposes in the Shan-Shan kingdom. Its original home was North-West India, probably in the region of Peshawar. It agrees closely with the post-Aśokan Kharoṣṭhī inscriptions from North-West India, and slightly less closely with the Prākṛit version of the *Dhammapada*. Further, it exhibits sufficient characteristics in common with the modern Dardic languages to be assigned definitely to that group. Among the Dardic languages it would seem to be most closely allied to Torwali. At the same time it differs from all other varieties of Prākṛit preserved in the degree to which its inflectional system has decayed and altered."<sup>4</sup>

In spite of the fact that the language shows a large number of foreign loan words, one can easily discern that the language of the documents is a variety of Prākṛit. Now the question that engages our attention is whether

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<sup>1</sup> *Kharoṣṭhī Inscriptions*, Oxford, 1929.

<sup>2</sup> "Iranian Loan Words in the Kharoṣṭhī Documents," *B. S. O. S.*, 1934-35; "Tocharian Elements in Kharoṣṭhī Documents," *J. R. A. S.*, 1935; "The Dialectal position of the Niyā Prakrit," *B. S. O. S.*, 1936; "The Language of Ancient Khotan," *Asia Major*, Vol. II, p. 262; "Chinense Turkistan," *J. R. A. S.*, 1930, p. 47 ff., etc.

<sup>3</sup> Cambridge, 1937.

<sup>4</sup> *Ibid.*, Introduction, p. vi.

we can locate the position of the language in the scheme of Prākṛits as treated by ancient Prākṛit grammarians. The habitat of the language as well as its obvious affinities with the Dardic languages suggests to a Prākṛitist the name of *Paiśācī*. Let us see how far the language confirms to the *Paiśācī* peculiarities. After making a very thorough survey of all that has been stated by Prākṛit grammarians about *Paiśācī*, Dr. A. N. Upadhye summarised the *Paiśācī* tendencies as follows<sup>5</sup> :—

“ *Paiśācī* tendencies such as the hardening of the mutes, preference to dental nasal *n* and sibilant *s*, simplification of the conjuncts like *sn*, *st* etc., by anaptyxis, assimilating *jñ*, *ny* and *ṇy* in one and the same way, using *tūna* as the absolute termination and recording special words like *hitapaka*, noted by *Vararuci*, are, so to say, the bed-rock of *Paiśācī* dialect. These points are almost common with all the later grammarians that have described *Paiśācī*, though some of them have handled the details in their own way.”

Let us now see how far these tendencies are noticeable in the language of the Kharoṣṭhī documents. The strongest and the most distinguishing morphological feature of *Paiśācī* is that the third and fourth letters of a class are changed to the first and second respectively. Some grammarians make this rule universal,<sup>6</sup> others optional,<sup>7</sup> some confine it to intervocalic consonants only,<sup>8</sup> while yet others insist upon only the change of *d* to *t*.<sup>9</sup> In the language of the inscriptions we find the use of *t* in place of *d* as a well established usage, e.g., *yati* (*yadī*), *tivira* (*divira*), *vitita* (*vidita*), *taṃḍa* (*daṇḍa*), *tivya* (*divya*), *bhatra* (*bhadra*), *vivata* (*vivāda*), *Śarata* (*śarada*), *tura* (*dūra*). Words like *yadi*, *tade* (*tadā*), *anada* (*anyadā*), etc., are also found, and this might be taken to mean that the rule of option prevails here. An observation of Mr. Burrow<sup>10</sup> may, however, be noticed here. He says “ The natives of Shan-Shan pronounced everywhere *t* for both *d* and *t*. Further, the traditional system of writing was probably archaic, so that, for example, *dita* was written for what was pronounced *dida* by proper speakers of Prākṛit and *tita* by the natives of Shan-Shan. As a result, we find *t* and *d* used indiscriminately for intervocalic *t* and *d*.” Mr. Burrow goes further and shows that the general native tendency to pronounce *d* etc., as *t* etc., gave rise to a confusion in writing *d* and *t* and as a result we find many cases of *d* being

<sup>5</sup> A. N. Upadhye: “ *Paiśācī Language and Literature*,” *Bh. O. R. I. J.*, Vol. XXI, Parts I-II, pp. 1-37.

<sup>6</sup> Caṇḍa: *Prākṛit-Lakṣaṇa*, III. 39.

<sup>7</sup> Puruṣottama: *Prākṛitānuśāsana*.

<sup>8</sup> Vararuci: *Prākṛit-Prakāśa*, X. 3.

<sup>9</sup> Nami-Sādhu: *Kāvya-lakṣaṇa-tilkā*.

<sup>10</sup> *The Language of the Kharoṣṭhī Documents*, pp. 7-8.

written for *t* e.g., *dumahu* (*tumahu*), *dena* (*tena*), *danu* (*tanu*), *daḍita* (*taḍita*), *jinida* (*cinita*), *jorida* (*corita*) etc. These observations show clearly that hardening of the mutes was the rule with the people in their speech, but being conscious of the original letters they tried to bring them in, sometimes, in their writings, and this led to a confusion. The following examples of the hardening of the mutes are also noteworthy—*vithana* (*vidhāna*), *kilana* (*glāna*), *yokachema* (*yogakṣema*), *canma* (*janma*), *canati* (*janayati*), *saracidati* (*srjati*), *Pali*<sup>11</sup> (*bali*), *poka* (*bhoga*), *aphiñanu* (*abhijñāna*), etc.

The replacement of *ṇ* by *n* is another strong trait of *Paiśācī*. This is found to be invariably observed in the documents e.g., *śramana* (*śramaṇa*), *pramana* (*pramāṇa*), *guna* (*guṇa*), *kalyana* (*kalyāṇa*), *ganana* (*gaṇanā*), *ginanae* (*grahaṇāya*), *suvarna* (*suvarṇa*) etc. In fact the existence of the lingual nasal in the documents has been thought to be doubtful and it is certain that this letter is not to be found in most of them. But this does not mean that there was no sign for *ṇ* in the script used, for, in the Buddhist records included in those inscriptions we find *ṇ* used at its proper place. It only means that popularly it was pronounced as *n*.

The third strong characteristic of *Paiśācī* is the replacement of *jñ* and *nya* by *ñ*. This tendency is also found in the Kharoṣṭhī inscriptions, e.g. *viñati* (*vijñāpayati*), *sarvañadārtha* (*sarvajñātārtha*), *añña* (*anya*), *pumñña* (*punya*) etc.

According to Vararuci,<sup>12</sup> where Sauraseni substitutes *jja* in place of Sanskrit *ry*, *Paiśācī* substitutes *cc*. In the inscriptions we find a single *c* in such places, in accordance with the usual practice to avoid conjuncts, e.g., *kica* (*kijja-kṛtya*), *vyāvuca* (*vāvujja-vyāvṛtya*). Other morphological features of *Paiśācī* as mentioned by Vararuci and Hemachandra are the use of *sana* in place of Sanskrit *sna*, of *ria* in place of *rya* and *ḷ* in place of *l*. Examples of these with slight modifications are found in the inscriptions, e.g., *ssāna* (*snāna*), *ssāpaka* (*snāpaka*), *ssātra* (*snātra*), *ari* (*ārya*), *kiḷa*<sup>13</sup> (*kila*), *goṣaḷammi*<sup>13</sup> (*goṣālāyām*). Unlike any other Prākṛit *Paiśācī* is said to retain the conjunctive *ti* of the present tense. This we find as quite normal in the inscriptions e.g., *bhoti*, *bhonti*, *nasati*, *gachati*, *labhati*, *ramati*, *deti*, *śrūyati*, *garahati*, etc. According to Nami-Sādhu, intervocalic consonants are not

<sup>11</sup> "L was softened before i in the native language into what has been printed *lp'*, but what should be written *ly* or *ly'*," *ibid.*, p. 11.

<sup>12</sup> "jja cca," Vararuci, 10, 11.

<sup>13</sup> In the published version, the letter used is *q'* and the editors have added a note that "It is possible that the *q'* may have been either a spirant like English *th* or a lingual *j*". In the examples given here it is obviously nothing else but *j*.

dropped in *Paiśācī* as is done in all other Prākritis. This is fully confirmed by the *Kharoṣṭhī* inscriptions throughout. A few special net equivalents of *Paiśācī* are also found here, like *pisala* for *viśāla*, *ahuno* (*ahunī* or *ahunā* of grammarians) for *adhunā*, *tumahu* of *tume* for *tvam*, etc.

It will be seen from the above that most of the exclusive peculiarities of *Paiśācī* are traceable in the *Kharoṣṭhī* inscriptions of Chinese Turkistan. It is already agreed to by all the scholars who have devoted any attention to the language that it is a variety of Prākrit. If we now have to assign to the language a place amongst the varieties of Prākrit known to ancient grammarians, we can, in the light of the analysis set forth above, call it *Paiśācī* or a form of *Paiśācī* Prākrit. This conclusion throws some fresh light upon the question of the original home of *Paiśācī*. Grierson<sup>14</sup> has strongly propounded the view that it was the North-Western parts of India where *Paiśācī* Prākrit arose and flourished. Besides the close affinities between the Dardic languages of the North-West and the *Paiśācī* of the grammarians, there are the north-western versions of the Aśokan inscriptions<sup>15</sup> as well as many other *Kharoṣṭhī* inscriptions<sup>16</sup> showing similar affinities. The inscriptions under discussion now lend strong support to the same view. Again, *Paiśācī* is said to have been the language of the *Piśācas*<sup>17</sup> and *Bhūtas*<sup>18</sup> who are now no longer held as merely unholy spirits and hobgoblins of the later-day literature, but men of flesh and blood belonging to the North-Western border tribes.<sup>19</sup> The name *Piśāca* is still preserved in the modern language of that area called *Paṣto*. *Piśāt* is still the name of a town situated in an area called *Pasai Dir*. "The name *Pasāi*" according to Sir Aurel Stein,<sup>20</sup> "clearly refers to the Kafirs among whom this tribal designation exists to this day". The habitat of the *Bhūtas* can similarly be located in the North-West area. Kalhaṇa in his *Rājataranginī* speaks of king Lalitāditya conquering in the north of Kashmir, first the Kambojas and Tukhāras, and then the *Bhauṭas*. Along with the Daradas and Mlecchas the *Bhauṭas* are again said to have invaded and harassed Kashmir in the time of Nagayin.

<sup>14</sup> Z. D. M. G., LXVI, 1912, p. 49 ff.; *Bhandarkar Commemoration Volume*, Poona, 1917, p. 120.

<sup>15</sup> Hultzsch: *Inscriptions of Aśoka*.

<sup>16</sup> Sten Konow: *Kharoṣṭhī Inscriptions of the North-Western India*.

<sup>17</sup> 'विशाचानां भाषा पैशाची'. Bhāmaha on *Var.*, 10, 1.

<sup>18</sup> यद्भूतैरुच्यते किञ्चित् तद्भौतिकमिति स्मृतम् । Vāgbhaṭa : *Kāvyaśaṅkharā*, 3.

भूतभाषामयीं प्राहुरभुतायां बृहत्कथाम् । Daṇḍi : *Kāvyaḍarśa*.

<sup>19</sup> Pargitar, p. 290; *J. R. A. S.*, 1912, p. 711.

<sup>20</sup> Aurel Stein : *Ser India*, p. 11.

Since Kalhaṇa describes them as naturally pale-faced<sup>21</sup> so that their expression of anxiety was not discernable, it is obvious that he takes them to belong to the Mongolian stock.

In the Palai valley close to the southern foot of the Shahkot pass leading into the Swat, there is *Butān* (*Bhūtasthāna*) a large important Buddhist site. It was, according to Sir Aurel Stein, the scene where Sudāna (*Vasantarāja*) and his wife took refuge.<sup>22</sup> This area appears to have been one of the strongholds of the *Bhūtas* or *Bhauṭtas*, and they must have been closely associated with the *Piśācas* ethnologically as well as by location. These were the people, then, who spoke the *Paiśācī* which, thus, comes into line with other *Prākṛits* with a name that denotes the people that owned it as well as the region where it prevailed. One old grammarian had already asserted that the *Paiśācī* language belonged to the *Piśāca* country.<sup>23</sup>

Hemacandra and other grammarians after him have mentioned and described a special variety of *Paiśācī* which they call *Cūlikā Paiśācī*. None of the old grammarians, however, have explained what they mean by the word *Cūlikā*. But it was usually taken to mean *chullikā* (Sk. *Kṣudrikā*), i.e., a minor variety of *Paiśācī*. Pargitar<sup>24</sup> first tried to connect it with a people called *Cūlikā*. Later, Dr. Bagchi<sup>25</sup> brought to light the Paurāṇic mentions of the name which appeared variously as *Culika*, *Cūlika*, *Cuḍika*, *Śulika*, *Sūlika* and *Jhallika*, along with Tukhāra, Yavana, Pahlava, Cīna and others. He further discovered that in a Sanskrit-Chinese dictionary<sup>26</sup> of the eighth century the word *Suri* (*Sulī*) was explained as 'Hon' meaning 'barbarians', and applied by the Chinese only to the Sogdians of that period. On the strength of this and in view of the phonetic changes in the middle Indo-Aryan, Dr. Bagchi advanced the view that the "*Cūlikā-Paiśācī* may be considered to have been a variety of North-Western *Prākṛit* spoken by the Sogdians".

There is, however, another equation, perhaps slightly better than the above, possible. *Su-lig* is a well-known ancient designation of Kashgar,<sup>27</sup>

<sup>21</sup> चिन्ता न दृष्टा भौष्टानां वक्त्रे प्रकृतिपाण्डुरे ।  
वनौकसामिव क्रोधः स्वभावकपिले मुखे ॥

<sup>22</sup> Cunningham: *Ancient Geography of India*, Majumdar's note, p. 677.

<sup>23</sup> पिशाचदेशनियतं पेशाची द्वितयं भवेत् । लक्ष्मीधर.

<sup>24</sup> "Cūlikā Paiśācīkā Prakrit," *J. R. A. S.*, 1912, p. 711 ff.

<sup>25</sup> *J. D. L.*, Vol. XXI, Calcutta, 1931, pp. 1-10.

<sup>26</sup> Fan-yu-tsa-ming of Li-yen.

<sup>27</sup> Thomas F. W.: "Tibetan documents concerning Chinese Turkistan," *J. R. A. S.*, 1930, pp. 291-92; *Sir Asutosh Mookerjee Jubilee Volume*, III, pp. 38, 45, 49.

and it occurs in the Tibetan accounts of Khotan.<sup>28</sup> The Tibetan document in which the name occurs is a letter from a person named Bzu-ru, and speaks of going from *Su-lig* or *Sulig* (Kashgar) and arriving at Hute (Khotan). It is probably in this very sense that the word occurs in the Kharoṣṭhī document No. 661. It appears to me that it is this *Sulig* which reappears as *Sūlika* or *Culika* in our Purāṇas as well as in the name *Cūlikā Paiśācī*. The two peculiarities of this language, as noticed by Hemacandra, were that in it the third and fourth letters of a class are changed to the first, and *r* is optionally changed to *l*. These rules are illustrated by the history of the name of one of the most important towns in that area. What Hsuan Tsang mentions as *Na-fu-po* and Marcopolo as *Lop*, and later by Tibetan influence came to be known as *Nob*, was the ancient town of *Kro-raimna*, probably the capital of *Caḍota*.<sup>29</sup> This name subsequently got changed into *Loulan*. Judging about the merits of the names *Lop* and *Nob*, Sir Aurel<sup>30</sup> very modestly remarks "As I am neither a Sinologist nor a Tibetan scholar, I must hesitate to express any opinion as to whether the initial '*l*' of the mediæval and modern name, or the initial '*n*' of its Chinese and Tibetan representative indicates more correctly the original local pronunciation. But I may at least point out that whereas the change of initial Sanskrit and Prākṛit *l* into *n* is common in a number of modern Indo-Aryan vernaculars, the opposite conversion of initial *n* into *l* is familiar to me in at least one dialectic pronunciation of the Chinese Mandarin language."

What, however, interests us here in particular is the interchange of *b* and *p* in the names *Nob* and *Lop*, and that of *r* and *l* in *Kro-raimna* and *lou-lan*. They illustrate fully the only two special rules of *Cūlikā Paiśācī*, namely, the substitution of the first consonant in place of the third, and the optional substitution of *l* in place of *r*. The latter tendency is also noticeable in such words from the inscriptions as *parampulammi* and *kilme* which, in spite of the obscure explanations given by Thomas and Burrow,<sup>31</sup> are obviously equivalent to *Paramapure* and *grāma*. An example of even the fourth letter being changed to the first is *poka* which occurs for *bhoga*.

The name of the kingdom Loulan is said to have changed into Shan-Shan, according to Li-tao Yuan, in the year 77 B.C. when the king of Loulan was caused to be murdered by the Han and a puppet king set up in his place.

<sup>28</sup> Aurel Stein: *Ancient Khotan*, p. 52.

<sup>29</sup> *Kharoṣṭhī Inscription*, No. 678.

<sup>30</sup> *Ser India*, p. 322.

<sup>31</sup> *Language of the Kharoṣṭhī Documents*, p. 83.



## ON REFERENCES TO EARLIER GRAMMARIANS IN THE *AṢṬĀDHYĀYĪ* AND THE FORMS SANCTIONED BY THEM

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THAT by its very nature of completeness, scientific arrangement and developed technique, Pāṇini's famous work, the *Aṣṭādhyāyī*, cannot be the first work on Sanskrit Grammar is conceded by all. He must have had before him a sufficiently long tradition in grammatical writing to utilise for his system of Grammar. Both kinds of evidence—external and internal—are abounding to indicate the existence of grammarian-writers in pre-Pāṇini period. *Indra*, *Candra*, *Kāśa-kṛtsna*, *Āpiśali*, *Śakaṭāyana* as well as *Varṣa* are great figures of that period in the sphere of Grammar. The first five are mentioned as great grammarians in chronological order by Vopadeva in the *Kavikalpadruma* and the last is eulogized as reputed grammarian honoured in the court of Pāṭaliputra in the *Kāvya-mīmāṃsā* of Rājaśekhara.<sup>1</sup> But the *Aṣṭādhyāyī* so completely eclipsed the works of his predecessors that we are confronted with his monumental work as the first work in the extant grammatical literature. Besides the above external evidence, we have the internal evidence of Pāṇini himself about the long tradition of grammatical studies in India. In the *Aṣṭādhyāyī*, he mentions as many as ten specific names of early grammarians and also alludes to many others by general designations. There is not the least doubt about the veracity of his statements ascribed to earlier grammarians, for whenever comparison and verification are possible in the present available literature, Pāṇini's statements have been shown to have got the exact counterparts.<sup>2</sup> Our only pity is that we do not have available to us many works of pre-Pāṇini period and that very scanty material has survived Pāṇini. Consequently a good many of his statements cannot be corroborated at the present state of our knowledge.

The traditional interpretation of the *sūtras* containing references to earlier grammarians (*Pūrvācāryas*) regards them generally to be optional in character. In one sense it is an understandable procedure. The correctness or otherwise of a form is to be decided not only by the sanction of

<sup>1</sup> See pp. xiv-vi and xlviii of the *Survey of the Manuscript Literatures on Sanskrit Grammar*, etc. (Preface), by M. M. Haraprasāda Śāstrī (Calcutta, 1931).

<sup>2</sup> *Indian Historical Quarterly*, Vol. X, pp. 665-70; Thieme: *Pāṇini and the Veda* (Allahabad).

Pāṇini but of his predecessor grammarians also. The third person singular of the imperfect Past of the root √ *Rud* is *arodīt* according to Pāṇini (VII-iii-98), but according to *Gārgya* and *Gālava* (VII-iii-99) the form should be *arodat*. The Pāṇinian commentators would therefore make the sūtra (VII-iii-99) optional in character and for us in the twentieth century both the forms are permissible. The prevalence of such feminine bases as *Vācā*, *Nisā* and *Disā* can be accounted for only in this way, for according to Pāṇini, who sanctions no feminine suffix (*tāp*) in the case of consonant-ending bases, the forms should be *Vāk*, *Nik* and *Dik*. It is on the consideration of *Bhāguri*'s sanction<sup>3</sup> that the former sets of forms have gained currency. Hence there is nothing unnatural in the procedure adopted by the commentators in making the *Pūrvācārya*-mentioning sūtras optional and declaring almost everywhere that *Ācārya-grahanam vibhāṣārtham* (i.e., the mention of a *Pūrvācārya* in a sūtra is to make the sūtra of optional application).

But the fact nevertheless remains that this procedure shows scant courtesy to the scientific accuracy in interpreting those sūtras. We should not forget that Pāṇini refers to *Pūrvācāryas* only in some sutras and not everywhere. This very fact should convince us that there is some special significance in such mentions. When a sūtra sanctions a form in the name of a particular grammarian, the most natural interpretation would be to regard the form as correct according to that grammarian only. It is to the great credit of Pāṇini that he, moved by scientific considerations of precision, does not disavow that form altogether, but indicates its partial or limited correctness by ascribing it to a particular grammarian. That he himself did not agree with that grammarian needs no explicit mention. It is already implied there. *Kātyāyana*'s *Vārtika*—‘*Ācārya-desha-sīlane ca tadviṣayatā*’ (on I-i-43) clearly refers to this significance in the mention of a *pūrvācārya*. It is therefore a clear case of the departure by the commentators from the strictly faithful interpretation. If Pāṇini had intended these *pūrvācārya*-mentioning sūtras to be only optional in character, he would have followed his usual procedure of inserting such option-indicating words as *vā*, *vibhāṣā* etc., in those sūtras. The mention of early grammarians should therefore not be equated in meaning with the optionality of a sūtra. Pāṇini mentions *pūrvācāryas* only in those cases where he differed from them; and though for our practical purposes it may amount to result in the optionality of such sūtras, such an interpretation is unwarranted. We have no justification in reading in such sūtras a meaning not intended by Pāṇini. The traditional

<sup>3</sup> *The Siddhāntakaumudī*, II. iv. 82; see *Laghuśabdenduśekhara* on the same for a discussion of *Bhāguri*'s view.

interpretation lands the commentators in fresh difficulties from which they try to extricate themselves by offering unconvincing explanations. For example, there are *sūtras* (VI-i-92; IV-i-160; VI-iii-61; V-iv-112) the optional nature of which is either already expressed in the *sūtra* itself or can be understood through *Anuvṛtti*. In such cases, the mention of *pūrvācāryas* for making the *sūtras* optional would be quite unnecessary. So the commentators account for such mentions by saying “*Ācāryagrahaṇam pūjārtham*” (the mention of a grammarian is to bring honour to the work).<sup>4</sup> Another curious explanation is offered in the *Kāśikā* on the *sūtra* (IV-i-153), —“*Vacana-sāmarthyādeva samāveśe labdhe Ācāryagrahaṇam—Vaicitryārtham*” (Option being understood in the *sūtra* itself, the mention of an *Āchārya* is for uniqueness). The author of the *Praūḍhamanoramā* goes still further and, failing to grasp the significance of mentioning a number of *Pūrvācāryas* on one and the same topic (for indicating optional application according to him), boldly asserts the uselessness of the *Pūrvācārya*-mentioning *sūtras*.<sup>5</sup> Needless to say that these explanations cannot be seriously urged and overlook the significance of Pāṇini's technique.

Pāṇini's work has got its own technique. We would not be justified in criticising his *sūtras* from a standpoint not consistent with his technique. Dr. Baṭakṛṣṇa Ghosh has expressed very ably Pāṇini's purpose in mentioning his predecessors, “when Pāṇini mentions a *pūrvācārya*, he means exactly what he says, namely that the particular view of the *pūrvācārya* is not shared by him, even though the forms concerned might not be quite unknown in the language.”<sup>6</sup> But we do not see much cogency in his subsequent statement (deducible according to him as a corollary from the above proposition) that “the *sūtras* characterised by unambiguous terms like *vā* and *Vibhāṣā* represent his own views from which others differed.” In the case of the *sūtras* declared by Pāṇini to be optional (e.g., VIII-iv-59), there is nothing to warrant the conclusion that other grammarians differed from him. The *sūtra* means neither more nor less than this that Pāṇini regarded as correct both the forms sanctioned by it. In the absence of anything to the contrary, we have to presume that other grammarians agreed with him in this respect. If they differed from Pāṇini,

<sup>4</sup> पूजार्थमित्यस्य स्वशास्त्रपूजार्थमित्यर्थः (Nāgeśa in his comment on the *Vārtika* आचार्यदेश शीलने च तद्विषयता on the *sūtra*, I. i. 43.)

<sup>5</sup> अनचि चेत्येव द्वित्वविकल्पसिद्धौ त्रिप्रभृतिष्वित्यादि सूत्रत्रयं नारम्भणीयम् (बालमनोरमा on the सूत्र, VIII. iv. 52.)

<sup>6</sup> See p. 21 of D. R. Bhandarkar Commemoration Volume (Calcutta, 1940).

we should expect him to state their dissent clearly as he does in VIII-iv-67. So long as Pāṇini does not record the dissent of other grammarians in a sūtra of optional application, we are not justified in regarding the above corollary as an "indirect inference from the first proposition". Nor do we see any indispensability in the evidence,<sup>7</sup> adduced by Dr. Ghosh as a positive proof for the first proposition. He has made a close scrutiny of the sūtras (VIII-iii-18/20) and after pointing out the discrepancies and redundancies in the commentators' interpretations, has hit upon a similar though not quite identical case to demonstrate that "Pāṇini's purpose in mentioning pūrvācāryas could not have been merely to suggest that the sūtras concerned are not of universal application." This evidence is no doubt conclusive and very ably put forth. But we cannot help saying that it is more after a Drāviḍa-prāñyāma procedure. A more direct and positive proof would be a reference to such sūtras (e.g., VI-i-92), where besides mentioning the name of a pūrvācārya, Pāṇini uses the word *Vā*, also. This sūtra clearly shows that Pāṇini's purpose in mentioning a pūrvācārya's name is not merely to indicate the optional nature of the sūtras, but to record the opinion of other grammarians about usages, which despite Pāṇini's implied disagreement were not unknown in the language.

Dr. Ghosh is keen on establishing<sup>8</sup> that the names of pūrvācāryas are invariably mentioned in the end of the sūtras. Anticipating the two obvious exceptions (I-i-16 and VI-i-127), he says that the word, '*Śākalyasya*' in the former sūtra is syntactically connected with "Anarshe itau" and does not mean the usual meaning as '*Shākalyasya matena*.' He seems to ignore the difficulty that his interpretation would imply the existence of an *iti* of *Śākalya* which is *Ārsha*, otherwise the word *anārshe* in the sūtra would be rendered superfluous.<sup>9</sup> About the second exception, he cuts the Gordian knot by declaring that the sūtra was originally divided into two parts (*Yoga-vibhāga*),—a fact not known even to Patañjali, for he comments on the sūtra as one unit. The third exception (III-iv-111), the ending word of which is not a pūrvācārya's name and has got its special significance according to Patañjali, apparently does not concern him,<sup>10</sup> for again he has reiterated this theory without taking note of the same. We should also not forget that the mentions of pūrvācāryas by general designations (such as *prācām*, *udīcām* etc.), are not generally in the end. As shown elsewhere,<sup>11</sup> there is

<sup>7</sup> D. R. Bhandarkar Commemoration Volume, pp. 22-23.

<sup>8</sup> Indian Culture, Vol. IV, pp. 387-99.

<sup>9</sup> New Indian Antiquary, Vol. I, No. 7, pp. 454-56.

<sup>10</sup> D. R. Bhandarkar Commemoration Volume, p. 21.

<sup>11</sup> New Indian Antiquary, Vol. I, p. 456.

no hard and fast rule about the order of words in Pāṇini's sūtras. The assertion of Dr. Ghosh about the ending of pūrvācārya-mentioning sūtras, is therefore not well-founded.

Pāṇini's mention of pūrvācāryas is of a specific and definite nature. When more than one pūrvācāryas differ from him, he mentions all of them (VII-iii-99 and VIII-iv-67). In case of disagreement with more than three, he uses the expression *Ācāryāṇām* (VIII-iv-52; VII-iii-49). As this expression is invariably used after mentioning a number of other grammarians, it is traditionally believed that the reference is to the great teacher of Pāṇini for whose respect the word has been used in plural number. Lesser grammarians are referred to by the expression, 'ekeṣām' (VIII-iii-104). To show the agreement of all grammarians on a point (the mention of which is rendered necessary in view of the disagreement mentioned in the preceding sūtras on a similar or allied point), Pāṇini uses the expression 'Sarveṣām'. For indicating the dialectal varieties, he refers to the Easterners (*Prācām*) and Northerners (*Udīcām*). The former designation (*Prācām*) is used in some sūtras in the sense of 'Eastern regions'.<sup>12</sup> The latter expression (*Udīcām*) refers to northern grammarians and taken in conjunction with *Prācām* clearly shows that Pāṇini, hailing from West, dealt with the western dialect as the standard Sanskrit and occasionally noted the departures in the Eastern and Northern dialects. The spread of Sanskrit in South occurring in post-Pāṇinian period, he does not take note of the southern dialects.

With these prefacing remarks, we now proceed to give below an alphabetical list of the pūrvācāryas, referred to in the *Aṣṭādhyāyī* with a brief descriptive note on the forms allowed by different grammarians:

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| <i>Ācārya</i>             | (i) VII-iii-49 sanctions the form खट्वाका (an unknown cot); according to Pāṇini the form ought to be खट्विका or खट्वकां.       |
|                           | (ii) VIII-iv-52 sanctions दात्रम्; according to Pāṇini the form is दात्रम् (a cutting instrument).                             |
| <i>Āpīśali</i>            | VI-i-92 allows two forms उपार्षभीयति and उपर्षभीयति (उप + ऋषभीयति); according to Pāṇini, the form is उपार्षभीयति only.         |
| <i>Udīcām</i><br>(Udañch) | (i) III-iv-19 sanctions the phrase अपमित्य याचते (He exchanges after asking); according to Pāṇini the form is याचित्वा अपमयते. |

<sup>12</sup> I. i. 75; IV. ii. 120, 123, 139; VI. ii. 74, 99, iii. 10; VIII. iii. 14, 24.

- (ii) IV-i-130 sanctions गौधर in the sense of son of गौधा according to Pāṇini the form is गौधेरः.
- (iii) IV-i-157 sanctions आम्नगुप्तायनिः (son of आम्नगुप्त); according to Pāṇini the form is आम्नगुप्तिः.
- (iv) VI-iii-32 sanctions मातरपितरौ (parents); according to Pāṇini, the forms are माता-पितरौ and पितरौ.
- (v) VII-iii-46 sanctions क्षत्रियिका; according to Pāṇini, the form is क्षत्रियिका (a क्षत्रिय lady).
- (vi) IV-i-153 sanctions the forms कारिषेणिः, लाक्षणिः, कौम्भकारिः; according to Pāṇini the forms are कारिषेण्यः, लाक्षण्यः, कौम्भकार्यः.

*Ekeṣām*

VIII-iii-104 sanctions अर्चिभिष्ट्वम्; according to Pāṇini the form is अर्चिभिस्त्वम् (a prose formula of *Yajurveda*).

*Kāśyapa*

- (i) I-ii-25 sanctions two optional forms in the past absolutive from the roots  $\sqrt{तृष्}$ ,  $\sqrt{सृष्}$  and  $\sqrt{कृष्}$ , तृषित्वा, तृषित्वा etc.; according to Pāṇini, only the latter form is permissible.
- (ii) VIII-iv-67 shows काश्यप's opinion that an अनुदात्त following an उदात्त is changed to स्वरित, while Pāṇini restricts this change only to those cases where the अनुदात्त is not followed by an उदात्त, or स्वरित. The grammarians गार्ग्य and गालव are in agreement with काश्यप.

*Gārgya*

- (i) VII-iii-99 sanctions the form अरोदत् in the imperfect past third person singular from  $\sqrt{रुद्}$ ; according to Pāṇini, अरोदीत्. See गालव.
- (ii) VIII-iii-20 permits the combination of भोस् + अत्र to be भो अत्र; according to Pāṇini, the form is भोयत्र. शाकटायन (VIII-iii-19) agrees with गार्ग्य in this case, but शाकटायन makes the य sound in भोयत्र weaker in pronunciation (cf. VIII-iii-18).

(iii) VIII-iv-67. See काश्यप and गार्ग्य.

*Gālava*

- (i) VI-iii-61 allows प्रामणिपुत्रः for प्रामणीपुत्रः, permissible according to Pāṇini.

- (ii) VII-i-74 allows ग्रामण्या (adjective to ब्राह्मणकुलेन) ग्रामण्ये etc.; according to Pāṇini the forms are ग्रामणिना, ग्रामण्ये etc.
- (iii) VII-i-99 sanctions the form अरोदत् for अरोदीत्, permissible according to Pāṇini. Cf. गार्ग्य.
- (iv) VIII-iv-67. See काश्यप and गार्ग्य.
- Cākra Varmaṇa* VI-i-130 permits the absence of घुत in अस्तु हीत्यब्रवीत्; according to Pāṇini, it should be अस्तु ही ३त्यब्रवीत्.
- Prācām* (prāñc) (i) III-iv-18 sanctions अलं रुदित्वा; according to Pāṇini, it should be अलं रोदनेन, or मारोदीः.
- (ii) IV-1-17 गार्ग्यायणी; Pāṇini allows गार्गा.
- (iii) IV-1-43 शोणी; Pāṇini permits शोणा.
- (iv) IV-1-160 ग्लुचुकायनि; Pāṇini allows ग्लौचकिः.
- (v) V-iii-80 उपङः, उपकः; Pāṇini allows उपियः, उपिकः, उपेद्र दत्तकः.
- (vi) V-iii-94 एकतरः, एकतमः, Pāṇini allows तर and तम suffixes from the bases किं, यद्, तद् only.
- (vii) V-iv-101 द्विखारम्, Pāṇini permits द्विखारि (खारी is a measure).
- (viii) VIII-ii-86 allows the phrases, आयुष्मानेधि दे ३ वदत्, देवद ३ त, देवदत्त ३. But Pāṇini allows only the last form.
- (ix) III-i-90 allows the forms कुष्यति पादः स्वयमेव and रज्यति वक्त्रं स्वयमेव; according to Pāṇini the forms are कुष्यते पादः स्वयमेव and रज्यते वक्त्रं स्वयमेव.
- Bhāradwāja* VII-ii-61 sanctions by implication ययिष (2nd person singular in past perfect); according to Pāṇini it is ययाष (from √यौ).
- Śākaṭāyana* (i) III-iv-111 अयुः (past imperfect third person plural from √या); according to Pāṇini, the form is अयान्.
- (ii) III-iv-112 अद्विषुः, Pāṇini allows अद्विषन्.
- (iii) VIII-iii-18 makes the य sound weaker in pronunciation, भैर्येत्त्र; according to Pāṇini, there is full pronunciation of य sound, while गार्ग्य and शाकल्य favour its dropping. See गार्ग्य and शाकल्य.

- (iv) VIII-iv-50 permits the form इन्द्रः; according to Pāṇini, it may be इन्द्रः also.
- Śākalya*
- (i) I-i-16 वायो इति in padapāṭha of शाकल्य; Pāṇini allows वायविति.
- (ii) VI-i-127 कुमारि अत्र; according to Pāṇini it is कुमार्यत्र.
- (iii) VIII-iii-19 permits क आस्ते and भो अत्र. But according to Pāṇini the forms are कयास्ते and भोयत्र. See शाकटायन and गार्ग्य also.
- (iv) VIII-iv-51 allows the form अर्कः only; according to Pāṇini the form is अर्ककः also.
- Senaka*
- V-iv-112 sanctions उपगिरम् (near a mountain); according to Pāṇini, it is उपगिरि.
- Sphoṭāyana*
- VI-i-121 permits the combination of गो + अजिनम् to be गवाजिनम्; according to Pāṇini the forms are गो अजिनम् or गोऽजिनम्.
- Sarveṣām*
- (i) Having mentioned in VII-iii-99 that the roots √हृद् etc., have according to गार्ग्य and गालव the forms अरोदत् (imperfect past from √हृद्) as distinguished from अरोदीत् sanctioned by him, Pāṇini says in VII-iii-100 that all agree as regards the form आदत् from √अद्.
- (ii) Having shown the difference of opinion among गार्ग्य, शाकल्य and शाकटायन and himself about the form resulting from the combination of भोस् + अच्युत, Pāṇini says (VIII-iii-22) that all agree about the form भो देवाः (भोस् + देवाः).

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## A CRITICAL DISCUSSION OF THE STATUS OF SENSE-DATA

### Part II. The Primary or Spatial Properties of Physical Things

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IN passing to a consideration of what Locke called 'primary qualities' we are at once confronted with the wide range of questions raised by the modern theories of relativity and of the atomic structure of matter. It is, of course, impossible here to enter upon any detailed discussion of these questions, and I confine myself to certain general reflexions that bear immediately on the problem with which I am concerned.

In the first place, following what has just been said in regard to the arguments advanced in favour of the view that secondary qualities are subjective in character, it is scarcely necessary to deal at length with those advanced against the objectivity of primary qualities. Mr. Bradley, for example, maintains, after the manner of Berkeley, that if the secondary qualities are appearance, the primary are certainly not able to stand by themselves; a contention which, although it may be contested on grounds not altogether without force, I am not wishful to dispute. Mr. Bradley argues (*a*) that the relation of the primary qualities to the secondary, on the assumption that the latter are merely appearances, is unintelligible, (*b*) that the line of reasoning pursued in regard to secondary qualities is equally applicable to primary ones, and (*c*) that extension is never given apart from some quality that is secondary. Clearly, all these arguments may be admitted, but unless the validity of what he has urged in respect to secondary qualities be conceded, they prove nothing at all. The only other argument that Mr. Bradley brings forward in this context has reference to the character of space itself. It is, he insists, impossible to find in the nature of the extended any intelligible answer to the question how the terms (namely, parts of space) stand to the relations which have to hold between them. But this contention rests solely on the presupposition that *all* relations must modify the terms between which they hold,—a dogma the untenability of which has been sufficiently shewn in more recent discussion.<sup>1</sup> Granting it to be true that *some* relations modify the terms between which they hold, it is certainly not true that *all* do; and

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<sup>1</sup> Cf., for instance, Prof. Moore's essay on "External and Internal Relations" in his *Philosophical Studies*, p. 276, sqq.

amongst those relations which may be said to be 'purely external' spatial relations must clearly be grouped.

In the second place, I find it quite impossible to accept the view propounded by Kant and Lotze that space, being a form of intuition, is subjective, although, of course, that raises a large metaphysical issue, into the intricacies of which I cannot now enter. Briefly, a main line of reflexion upon which I should rely would be the following. In the history of conscious experience, it is only in and through the character of that which we apprehend as objective that the subjective inner life of the finite self receives any definiteness of meaning. It is in virtue of our coming to recognise in our experience a broad contrast between two features of apprehended contents—that of *extendedness*, on the one hand, and that of *non-extendedness* with its accompaniment of feeling, on the other hand, that we are originally enabled to differentiate between the objective and the subjective. It would, therefore, amount to reversing the true order of development to regard space as in any way or form imposed by the mind itself upon data which as such are non-spatial. Inasmuch as it is only in and through the distinction between the spatial and the non-spatial that a conscious subject, in the strict sense, becomes possible, it would be truer to say that space is a condition of mind than that mind is a condition of space.<sup>2</sup> Mind, namely, is not an abstract entity; it lives only in and through what it concretely apprehends; and what we are sometimes wont to call the product of mind would more accurately be said to be that which goes to the very making of mind.

I am contending, then, that the distinction between self and not-self is not a distinction prior to that between the non-spatial and the spatial but that the latter is the more fundamental by the aid of which the former, the more elaborate distinction, is gradually attained. I am not saying, of course, that in our perception of space, we may not clothe the objective reality with many a characteristic that does not, in strictness, belong to it. The contrast between the characteristics which anything real actually has and the characteristics which it may appear to us to have certainly holds here, as, we have seen, it does hold in respect to the so-called secondary qualities of objects. Habitually we conceive of space, and depict it to ourselves, after the fashion of our visual picture of it, and we interpret space-relations in terms of visual experience. Now, it requires little consideration to convince us that this visual picture contains more than is involved in space relations pure and simple and that the truly spatial factors in the visual presentation of space are elements only capable of being extracted from the visual picture

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Cp. Prof. Adamson's *Development of Modern Philosophy*, Vol. I, p. 291 sqq.

by reflective scrutiny, and in particular by comparison with what we come to be aware of through tactual and motor apprehension of the same relations. But that in no way entitles us to conclude that real or 'physical space', as it has been called, is merely a 'logical construction' on our part and has nothing corresponding to it in the actual world. The fact that we can only obtain accurate knowledge of it by means of constructive thought detracts in no way from the possibility of ascribing to it objective reality.

And this leads me to notice, in the third place, a prevalent misconception, as it seems to me, to which we are liable when we speak of 'visual extension' and 'tactual extension' and contrast these with what I will call 'objective extension'. For example, in conformity with the sensum theory, it is frequently argued that visual and tactual sensa are extended, but that they are extended in a sense different from that in which physical things are extended. Physical things are said to be extended in space. But in what other sense can sensa be said to be extended? In order to be extended at all it would seem to be a condition *sine qua non* that the entity in question must be in space. If, for example, a patch of colour (which is frequently cited as an example of what is meant by a sensum) is said to be extended, that surely implies that there is space all around it. It is not spatial in and for itself. To attempt to get over the difficulty here by contending that the patch of colour is in a space of its own, in visual space that is quite other and not included in actual space, is, it seems to me, to plunge ourselves into hopeless perplexity. For one thing, the visual space would presumably have to be said to be that which is in front of the eye and which extends to a certain distance from it. Yet, in that case, this assumed visual space would, at least, at or near the eye have a common point with actual space, and would thus be of one piece with it. In fact, to say that visual sensa are spatial but in a different sense from that in which physical things are said to be spatial is on a par with saying that visual sensa are numerable but in a different sense from that in which physical things are said to be numerable.

This is, I think, the kind of perplexity into which those are thrown who persist in regarding what they call a sensum as a *product* which has come into existence through the action of external realities upon the individual percipient. At the same time, however, if the sensum be an existent occasioned in the manner supposed, it is well-nigh impossible to understand what is meant by saying that it is in a 'sensible space' which is other than and distinct from the 'common' or 'physical space' in which the entities that occasion it are said to be. If it be an existent in the same sense in which physical entities are existent it must surely exist in the same space in which

they do. We must be able to say of it that it is to the right of the physical existent A and to the left of the physical existent B, and so on. Otherwise, the ascription to it of 'existence' would seem to be devoid of significance. For it can scarcely be maintained that the operative causes that give rise to *sensa* generate also the 'sensible space' in which they are taken to be located. The view in question may, no doubt, be made to wear a more plausible aspect if the notion of 'appearing to have' such and such a characteristic is objectified, so to speak, into the notion of an 'appearance'. It may seem, then, natural to speak of the 'appearances' as being in an apparent space which is different from the 'actual space' in which physical entities are supposed to be. As a matter of fact, I do not believe it would be natural, because, while 'appearances' may be thus objectified, it would be an exceedingly difficult matter to explain how from them 'apparent space' comes to be manufactured. But it is sufficient here to observe that if 'appearances' are taken in this way to form a sort of veil or screen of *tertia quaedam* between us and the real world, it would have to be admitted that the only space we could perceive or be aware of would be apparent space; any other would be as absolutely unknowable as the things *per se* of Kant.

The conclusion, then, I am making for is, in short, this, that the distinction between 'real' and 'apparent' extension is meaningless except on the presupposition that we do, in some way, apprehend 'real extension'. It may well be, and I think is, the case that such apprehension is not of the purely sensuous character which the apprehension of secondary qualities has frequently been taken to be. But I have already insisted that perception never is a process of merely accepting what is given. Unquestionably, if we are apprehending a round red patch, the roundness *is* given. Yet, while it is given, if I may say so, *through* sense, while we should not be aware of it if we were not sensuous beings, it is not given *to* sense, because we should not be aware of it unless we were also aware of the relative positions of the parts of the red patch, of the unity of these parts, and of the distinction between the patch as a whole and its surroundings. In other words, an act of comparison, an act of discriminating, must be presupposed. And consequently the features thus discriminated, the recognised identity in the midst of difference, the spatial relations namely, cannot be said to be sensuously, but must rather be said to be conceptually apprehended. So far from these characteristics being imposed by us upon the sensuous data, this means I take it, the exact opposite. These characteristics are undeniably 'there'; if they were not, there would be no means of explaining how they appear to be there. They are 'given'; but not in the manner in which sense-data are supposed to be 'given'. Visual 'data', for example, are only 'given' to

us when our eyes are open; but we can think of spatial relations, of identity and difference, whether our eyes be opened or no. What, then, does this amount to? It amounts surely to saying that the primary data of perceptual apprehension are not mere sense-data. We do not start with the apprehension of detached patches of colour or snatches of sound or fragments of smell, and out of these *construct* the complexes which we describe as 'things'. On the contrary, we start with an environment the constituents of which are but crudely and vaguely apprehended, and our capacity of perceiving advances by a growing facility of discriminating differences, of distinguishing features previously undistinguished, of holding elements apart that formerly were confused together. So that by degrees things come to be differentiated from things, and the characteristics of any one thing to be differentiated from one another and from what we call the 'thing'. In short, at no stage in the history of perceptual experience, and least of all in the earlier stages, can there be said to be immediate awareness of isolated sense-qualities; such awareness of these as we can attain to is invariably reached through a process of abstraction, and is, therefore, at a far remove indeed from anything that can be called 'immediate awareness'.<sup>3</sup> If, then, the primary data of perceptual apprehension are not mere sense-data, what are they? One answer alone seems possible. They are entities that have sensuous qualities, that are characterised by these qualities, entities that are both numerically and qualitatively different from one another, while at the same time mutually related to and influencing one another. And this can only mean that they are in space, and that the space in which they are is the space the properties of which we gradually come through the process of knowledge to recognise and to describe.

Now, when once it is granted that we perceive things characterised by qualities, and not mere qualities as such, it becomes, I think, evident that the space which in perceiving them we are cognisant of must be the 'common space of nature', and that to speak of each person as percipient of a 'private space,' or of various 'private spaces' (visual, tactual, and so on) is wholly illegitimate. It is quite true, as Dr. Broad has pointed out,<sup>4</sup> that when people talk of space and spaces they may be using these correlative terms in two quite different senses. On the one hand, if we say, for example, that the garden of Trinity is one space and the garden of King's another, we mean that these are different regions which do not overlap, but which are both

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<sup>3</sup> Cf. Prof. Hicks' article "Appearance and Real Existence," *Procs. of Arist. Soc.*, N.S., Vol. XIV, p. 37.

<sup>4</sup> *Scientific Thought*, p. 27.

*parts* of the single space of nature; we do not mean that they are different *kinds* of space. When, on the other hand, mathematicians distinguish Euclidean and non-Euclidean spaces, they do mean different possible *kinds* of space, and not different *parts* of the space of nature, of whatsoever kind that may be. But no one would contend that the difference between my 'private space' and your 'private space' is a difference of the latter description, a difference of kind. However these 'private spaces' may be supposed to differ from one another, they certainly do not differ in the way in which Euclidean space differs from a space that is non-Euclidean. These so-called 'private spaces' are, then, the same in kind. And that implies that, in the long run, they cannot be a plurality of spaces, that at the most they can only be ways in which the one 'common space' is apprehended. If, for instance, we assert that our 'visual space' is different from our 'tactual space' we can only mean that the one space which we are apprehending by sight on the one hand and by touch on the other appears to us differently in the two cases, not that they are two different spaces. For we shall be compelled to admit that specific regions of what we call 'visual space' coincide with specific regions of what we call 'tactual space', hard though we may find it to indicate exactly which regions do. And similarly, we shall not be able to avoid admitting that a certain patch of colour in my 'visual space' coincides with a certain patch of colour in your 'visual space'; more precisely, that one and the same space may be occupied simultaneously by a patch of colour, my apprehension of which may differ from your apprehension of it. Mr. Russell, indeed, asserts that "the space of sight is quite different from the space of touch", that "it is only in infancy that we learn to correlate them". And he adds that "the one space into which both kinds of sensation fit is an intellectual construction, not a datum".<sup>5</sup> What, however, does he mean by saying that the space of sight and that of touch are 'quite different'? Seemingly, that the visual sensa A. B. C....and the tactual sensa M. N. O....form separate spatially related systems. Yet he is forced to acknowledge that these two kinds of sensa *fit into* one space—the space which, as he puts it, represents the one all-embracing space of science.<sup>6</sup> If that be so if notwithstanding their difference, they fit into one space, how can they be said to belong to different spaces, since as thus 'fitting in' they must together form *one* spatially related system? In this context, Kant's dictum would seem to be indisputable: "we can represent to ourselves only one space; and if we speak of diverse spaces, we mean thereby only parts of one and the same unique space."

<sup>5</sup> *Our Knowledge of the External World*, Old Edition, p. 113; New Edition, p. 118.

<sup>6</sup> *Ibid.*, Old Edition, p. 113; New Edition, p. 118.

It is worth while, in this connexion, drawing attention to a significant empirical fact, in corroboration of what I have been urging. In respect to the visual apprehension of an object shining, as we say, by its own light, we know on scientific grounds that the particles of which the object is composed are in a condition of rapid vibratory motion. This vibratory motion is regarded by us as distinct and different from the colour we perceive, and we neither actually perceive it nor imagine that we perceive it. But, now, consider the tactual apprehension of such an object as a table. If we pass our finger along its surface, we have, of course, certain tactual and motor experiences, but we recognise that these are quite distinct from the extension we are perceiving in the object. We certainly do suppose ourselves to be perceiving the extension of the table. We do not say that we feel the tactual and motor presentations, we say that we feel the extension itself. And if it be urged that this is an illusion, that we do not really perceive it, but only infer it, the question at once arises: why then should we come to imagine that we do perceive it, while we never come to imagine that we perceive the vibratory motions? How comes it that from perception alone we can describe the one and not the other? Not only so. The extension in the object cannot be something originally unperceived and only inferred from what is perceived, because from tactual and motor presentations destitute of any relations of extension, extension never could be inferred.

I proceed, in light of the foregoing considerations, to say something about the contrast between the 'apparent' and the 'real' primary qualities of physical objects. Manifestly, if what I have been urging has any degree of justification, the actual character of space itself will be of no small importance as a determining factor of the way in which things appear to us. The perspective properties of space, though normally they are not noticed in visual perception, nevertheless can, under certain conditions, become features of observation no less than 'sizes' and 'shapes'. They are not mere phantasms of the mind, and they will never be found by searching for them there. They are features of the external world, and if one wants to discover them it is outwards that one must turn, not inwards. It is, for example, a notorious circumstance that comparatively near objects are visually apprehended more clearly and distinctly than distant objects. My study table which from one point of view appears rectangular may from a more distant point of view appear to have two acute and two obtuse angles. But there is absolutely no need, on that account, to resort to the absurd assumption that the table really possessed both shapes, or to suppose that these different 'shapes', as distinct from the real table, both exist, ready to be seen by observers in suitable positions for seeing them. On the

contrary, given the real table possessing a determinate shape (whatever it may be), then the apparent shape of the table is explicable as a consequence of the real shape and of the known characteristics of space. That is to say, the apparent shape of the table is not something that is to be ascribed to the subjective process of perceiving; it is due to conditions no less objective than the real shape. So that here, as in numerous similar cases, the distinction between 'apparent' and 'real' is to be traced to the very nature of space itself.

### *1. Distance of Objects from the Observer*

The question as to the manner in which the so-called 'visual field' is connected with the 'nature of space' is the question which Berkeley discussed under the form of the way in which we visually apprehend things at a distance from us, and many of the considerations which he brought to bear still retain their strength and cogency. Negatively, he insisted that the distance of one object from another could only be directly and immediately apprehended by sight as a line connecting the two objects. The two objects must, that is to say, both be apprehensible in and through one and the same perceptual act. But, if distance from the eye itself be what is meant, then obviously only one of the objects is visually apprehensible. Clearly, therefore, it is not from anything contained in visual data pure and simple that we come to apprehend an object as at such and such a remove from us; and there is nothing for it but to inspect the contents of our mature experience in the hope of discovering some, at any rate, of the subsidiary factors involved. Now, reflexion on the illusions to which we are constantly liable respecting the distance of objects from us would seem to entitle us to conclude that what we take to be a direct and immediate apprehension of distance is, in truth, a complex estimate, based no doubt on certain visual data, but essentially of the nature of a judgment as contrasted with anything that could be called intuitive apprehension. The data in question are partly, at any rate, discoverable from scrutiny of the estimates we do, as a matter of fact, form of the distance of objects from us. We are influenced, namely, by (a) the clearness or obscurity of what we visually apprehend of the objects, (b) the experiences accompanying the fixing of the eyes in apprehending the said object, and (c) the vague results of past experience, that take the form of concepts of the normal size or magnitude of such objects as that before us.

In all this, however, there is nothing to suggest, even remotely, that what we are apprehending is a sensum in our immediate vicinity and not a physical object situate in space at a distance (say) of two miles from the position occupied by our own body. It is true we may easily be mistaken about



the actual distance of the object, we may easily judge it to be only one mile distant from us when, as a matter of fact, it is two. But our erroneous judgment is not itself constitutive of a visual object that may be described as one mile of distance. In truth, what we call distance from us, involving as it does recognition of movement and of the distinction between the body and extra-organic things, is not a constituent of visual apprehension pure and simple; and, strictly speaking, it would be right to say not only that we do not originally apprehend distance by the eye alone, but that we never do thus apprehend it. In other words, distance or 'outwardness' is not itself a visual object, not, at any rate, a visual object in the sense in which a tree or a lamp-post is. The 'real distance' of a lamp-post from the bodily organism of a percipient is, according to the view I am taking, as objective as the lamp-post itself; but there is involved in the visual perception of it a large number of non-visual factors, and it is by their means that the process of localising positions in space is rendered possible. The very complexity of the process makes it inevitable that it is peculiarly liable to illusion, readily deceived, and perhaps in all cases inaccurate.

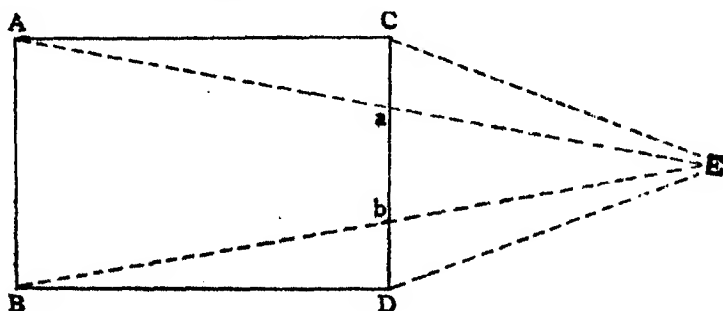
## 2. *Real and Apparent Size or Magnitude*

What I have just said of the apprehension of distance appertains also, though with certain qualifications, to the apprehension of the size or magnitude of objects by means of vision. What is called 'apparent size' or 'apparent magnitude' has rarely received clear and precise definition. Most certainly it is not to be identified with the size or magnitude of the retinal image. Of the retinal image we know in and through the act of visual perception absolutely nothing; and save for the researches of physiologists we should not be so much as aware of its existence. By 'apparent size' or 'apparent magnitude' I think we must understand not any one definite attribute which we assign to a specific object, but a highly complex psychological result, based no doubt on what we visually apprehend, but involving to a large extent motor and tactual experiences. We may, it is true, form to ourselves a hypothetical conception of the visual field as involving localization up to a certain uniform distance. And in such a hypothetical visual field it would be possible by means of the eye to discriminate the relative magnitudes of portions of colour and of figures and so on making up. But the conception would be entirely hypothetical. Our experience comes so soon to be dominated by reference to actual things and that *merely* visual features cease to be contemplated for themselves and do duty, as Berkeley argued, as signs. What we come to be interested in is what we call the real relations of things, the interpretations, namely, that we put upon the purely visual

features. Our estimate of 'apparent magnitude' depends, therefore, upon a multiplicity of circumstances, the influence of which may altogether outweigh that of the merely visual features. Among these circumstances not the least significant is the varying estimate we form of the distance of objects from us. Even this, however, cannot be asserted to be a condition invariably precedent to the estimate of apparent magnitude, because the latter is not unfrequently a condition of estimating the distance of objects from us. Probably the preponderating influence is exerted by the definite conceptions we have come to form of the concrete nature of the things which we partially apprehend in visual perception. And these considerations seem to me in themselves sufficient to account for many of the perplexities to which our estimates of size or magnitude lead us.

But, now, it is important to note that when, in mature experience, we distinguish between the 'real' and the 'apparent' size of an object, we invariably assume that we do know its 'real' size, and that the 'apparent' size is due to certain circumstances incident to the relation in which we, or our bodies, stand to the object in question. And in a large number of cases, at any rate, it can be shewn that the difference between the 'apparent' and the 'real' size is due not to any idiosyncrasies in our subjective modes of apprehending, but to veritable objective factors in what is being apprehended.

Let me cite an illustration made use of by Professor Cook Wilson<sup>7</sup> in this connexion. In the annexed diagram, A B C D represent the tops of four vertical posts rising to the same height above the same horizontal plane, and E represents the position of the eye of the observer in the same horizontal plane as A B C D. The straight line AE cuts CD in *a* and the straight line BE cuts CD in *b*. AC is equal to CD and parallel to it. In such a case,



the observer will perceive the points A and B between the points C and D, or more accurately he will perceive the point A immediately behind a point

<sup>7</sup> *Statement and Inference*, Vol. II, pp. 790-91.

$a$  between C and D upon CD, and the point B immediately behind a point  $b$  between C and D upon CD. The two points  $a$  and  $b$  are 'between' C and D; and similarly every point between A and B will be perceived behind a point in  $ab$ . Consequently, A, B, C and D will be perceived by the observer in the relative position  $CabD$ , measured along CD.

Now, to describe the facts here by saying that AB merely appears to the observer smaller than CD is, of course, in a sense true, but it is clearly not an adequate description. For the observer is supposed to be looking at the 'real' extension of the object itself, and what he perceives is definitely a part of the 'real' extension. He is looking at the point A as the end of AB, and what he perceives *is* the end of this line AB. Moreover, since the lines EC and EA are in different directions, and the points C and A are in these different directions and are perceived in the direction in which they are, the points C and A will be perceived as apart, that is to say A will not be behind C. Similarly B will not be behind D. All this is a result of geometry, and it is also a result of geometry that A and B will be perceived 'behind' the points  $a$  and  $b$  between C and D, as likewise the whole line AB behind a line  $ab$  less than CD. This relation of AB to  $ab$  is no mere 'appearance'; it is objective fact. We perceive A upon the same straight lines from E as that upon which  $a$  is, and A *is* actually on the same straight line. Again, it is just because we actually perceive the 'real' extension of AB, and not some 'appearance' different from it, that we perceive AB and  $ab$  in this relation, because it is the 'real' AB and no other length that stands in this relation to  $ab$  and E. Instead, then, of perspective being a mere subjective 'appearance', the geometrical theory of it implies that we perceive the actual extension of things in actual space. And, as Professor Cook Wilson points out, it is even misleading to say that the 'apparent size' diminishes as the object recedes, for what really diminishes is the part  $ab$  of CD 'behind' which AB is perceived. But this diminution is no mere 'appearance' it is an objective fact. It appears but it is also real.

Or, to put the matter somewhat differently, the position of the observer's body affects unquestionably the size of the object *as it appears to him*, but this is due, at all events in the large majority of cases, not to any subjective peculiarity on his part; it is due to geometrical properties of space itself. If two visible objects, or two parts of one visible object, are at the same distance from the position of his body, then he will perceive their relative sizes as they really are related. If, when at the same distance from him, A looks twice as high as B, then (provided, of course, other conditions do not come into play), it 'really' is so, should it be objected that this only gives us relative sizes, we may reply, in terms of modern scientific theory, that relative size

is really the only kind of size there is,—relative, however, not to minds but to the rest of the spatial world.

### 3. *Real and Apparent Shape or Form*

Similar considerations apply, *mutatis mutandis*, to the apprehension of form or shape. We certainly as a rule apprehend the form or shape of objects more accurately by means of the eye than by means of any other organ of sense. And the reason is sufficiently obvious. The eye affords by far the greatest possibility of simultaneously perceiving a large variety of parts or characteristics. In touch we require usually to move the tactile organ in determining the form of an object, and so have to build up out of the memories of tactual and motor experiences the apprehension at which we arrive. Moreover, the movements of the limbs are less adapted for discrimination of differences of direction than are the movements of the eye.

But, of course, the visual apprehension of form is not infallible. The difference between the 'apparent' and the 'real' breaks out here, no less than in the apprehension of distance and size. No doubt, too, in this context subjective conditions may and frequently do come into play. The form or shape of what we are visually apprehending may, for example, appear different from what it actually is through the influence of revived experiences, or of some prevalent interest. The shapes of fleecy clouds may seem to an imaginative child to wear the aspect of horses and chariots; we may mistake the stump of a tree for a large owl perched on a branch, and so on. Yet even so, the act of apprehension is directed on a physical thing that has a real shape or form; it is the real shape or form that is appearing in these perverted ways, and not an 'appearance' distinct and separate therefrom.

Nevertheless, it is, I think, true once more that in the large majority of cases the difference that manifests itself between the 'apparent' and the 'real' is explicable from objective conditions. To recur to well-worn instances. From certain positions a round penny looks to be in shape elliptical. It is, however, a known geometrical fact that the projection of a circle on a plane which makes a certain angle with the plane of the circle is an ellipse, the properties of which can be deduced on purely geometrical principles when the value of the angle between the planes is known. If, then, the plane at right angles to the line of vision makes a certain angle with the plane of the surface of the penny, the projection of the penny on the former plane will be elliptical in shape. That is to say, the penny will in fact occupy an area of an elliptical shape in the visual field of an observer from certain specific positions; and this is as much a fact of an objective kind as that the penny is round. Or take the instance of a straight stick partially immersed in water. The stick in

water is, it is true, one thing and the stick out of water another; yet there are good and sufficient reasons for asserting that the former is not really bent as it appears to be. But the laws of refraction being what they are, that the stick, under such circumstances, should visually appear so bent is an inevitable consequence of the actual state of things. As in the previous instance, the distinction between the 'apparent' and the 'real' is necessitated by objective conditions. We pervert the actual facts if we assert, as some writers do, that the visual 'appearance' is bent. We are supposing, then, that there is a bent entity of some sort—a *sensum*—upon which the act of perception is directed. All that the facts entitle us to affirm is that when the act of perception is directed upon a straight stick which is partially immersed in water, the stick appears bent. There would be no 'appearance' of bentness otherwise. Furthermore the apparent bentness varies with the movements of the observer,—that is to say with his position relative to the surface of the water, which is likewise an objective fact.<sup>8</sup>

The question may, indeed, be raised whether, in view of modern scientific theory, any significance whatsoever can, in the long run, be retained for the notion of 'real' shape or form as applied to physical things. There is, we are told, nothing 'substantial' about such an entity as a table according to the scientific concept of the world as it stands at the present day. The old idea of substance has been, it is alleged, completely superseded, and not even the protons and electrons of which the 'solar system' type of atom is composed are to be thought of under that category. The table viewed scientifically is 'mostly emptiness', sparsely scattered in which are numerous electric charges rushing about with great speed; but the combined bulk of these would scarcely amount to a billionth of the bulk of the table itself. And there is, we are assured, all the difference in the world between a conception of this sort and the table of ordinary commonsense which is regarded as the type of solid reality—'an incarnate protest against Berkleian subjectivism'.<sup>9</sup> Does not this, then, mean that for the present-day physicist the commonsense notion of shape or size has likewise become entirely obsolete, so that, in spite of what I have been urging, all shape or size is 'apparent' only and not 'real'?

So far as I am able to judge it does not, but I will only venture here to lay stress on one consideration. Assuming that protons and electrons are taken to be actual existence and not mere metrical symbols—and I cannot see how the physicist can move a step except on that assumption—it is clear,

<sup>8</sup> Cp. Prof. Hicks' Essay, *ibid.*, p. 41.

<sup>9</sup> Cp. *The Nature of the Physical World*, by Professor A. S. Eddington, *passim*.

from the account that is given of their modes of behaviour, that the mere amount of space they are said to occupy is a relatively unimportant matter. Each has, namely, its own 'field of activity', and this extends far beyond the region in which it may happen to be located. So that to describe the space that intervenes between one electric charge and another as mere 'emptiness' would seem, in strictness, misleading<sup>10</sup>; for it is part of the 'field of activity' of innumerable centres of energy so to speak, that are grouped together in such a complex whole as we name a table. Now, in many respects, the difference between the complex made up of inert particles in close proximity and a complex made up of electric charges after the manner indicated is doubtless radical enough; but, in this particular respect, it hardly seems to be of vital significance. In either case, the complex will have a certain contour or boundary which will distinguish it from what is outside or beyond itself, and this surely may legitimately be said to be its 'real' size or shape. I may appeal for confirmation to what Professor Eddington writes in reference to the Fitzgerald contraction. That the dimensions of a moving rod can be altered merely by pointing it in different ways would, he argues, be surprising, if the rod were a continuous substance. "But the scientific rod is a swarm of electrical particles rushing about and widely separated from one another. The marvel is that such a swarm should tend to preserve any definite extension. The particles, however, keep a certain average spacing so that the whole volume remains practically steady; they exert electrical forces on one another, and the volume which they fill corresponds to a balance between the forces drawing them together and the diverse motions tending to spread them apart."<sup>11</sup>

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<sup>10</sup> "We have," says Professor Eddington, "to attribute as much character to the interspace as to the particles and in present-day physics quite an army of symbols is required to describe what is going on in the interspace," *ibid.*, p. 31.

<sup>11</sup> *Ibid.*, p. 6.

# A STUDY OF THE METHODS OF DETERMINATION OF PHOSPHORIC ACID IN SOILS

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DURING the course of determinations of phosphoric acid in various soils it was observed that the results obtained by various methods were not uniform and in the case of certain soils according to one method no  $P_2O_5$  was found to be present, but according to other methods these soils were found to contain varying quantities of  $P_2O_5$ . It was therefore considered desirable to study some of the methods ordinarily employed in the laboratory for the determination of  $P_2O_5$  in soils with a view to evolving if possible a suitable method capable of giving uniform results, and the results obtained are recorded in this paper.

## Experimental

In the first instance determinations of phosphoric acid in HCl extracts of various soils were carried out by three different methods and the results obtained together with those obtained subsequently by adopting the suggested modified method are given in Table I.

Results given in Table I show that the quantities of  $P_2O_5$  present in various soils as ascertained by the three different methods are very variable and that there is a lack of agreement between the results of some of the duplicate estimations carried out.

Experience gained in the course of this work had shown as previously recorded by Prescott<sup>2</sup> that a complete removal of silica is extremely essential in order to determine accurately the  $P_2O_5$  present in the HCl extracts of soils. The three methods of  $P_2O_5$  estimation employed in these experiments were found to be defective in one way or the other as indicated below:—

(1) *Prescott's method.*<sup>2</sup>—According to this method removal of silica and precipitation of  $P_2O_5$  were found to be incomplete in many cases. It was found for example that filtrates from soils Nos. 3, 4, 5, 6 and 7 from Table I after precipitation of  $P_2O_5$ , were still found to contain appreciable quantities of silica and  $P_2O_5$  which could be determined by the modified method described in this paper. Some of the results obtained in this connection are given in Table II.

TABLE I. Percentages of  $P_2O_5$  in air-dry soils

Description of soils	Prescott's method		American Official method (without fusion of the soil)		Russell's modification of Prescott's method		Suggested method	
	Duplicates	Average	Duplicates	Average	Duplicates	Average	Duplicates	Average
1	2	3	4	5	6	7	8	9
1. Pusa No. 2, manured with super, 80 lb. per acre	0.1230 0.1249	0.1239	0.1132 0.1170	0.1151	0.123 0.129	0.126	0.1147 0.1140	0.1143
2. Pusa No. 1, no manure, Punjab experimental	0.0949 0.0978	0.0963	0.0975 0.0922	0.0948	0.1005 0.0974	0.0999	0.0997 0.0945	0.0971
3. Bhata soil, C.P.	0.1376 0.1458	0.1417	0.1613 0.1605	0.1609	0.1515 0.1601	0.1558	0.1642 0.1628	0.1635
4. Coimbatore black cotton soil, 4, plot No. 62	0.0491 0.0345	0.0418	0.0577 0.0585	0.0581	0.0592 0.0577	0.0585	0.0607 0.0607	0.0607
5. Dharwar black cotton soil, unmanured plot	Nil Nil	Nil	0.0315 0.0330	0.0322	0.0285 0.0307	0.0296	0.0345 0.0337	0.0341
6. East Khandesh black soil, Bhadgaon Farm	Nil Nil	Nil	0.0720 0.0682	0.0701	0.0731 0.0754	0.0742	0.0712 0.0705	0.0708
7. Black cotton soil, Saoner, C.P.	Nil Nil	Nil	Not estimated		Not estimated		0.0512 0.0494	0.0503

TABLE II. Percentages of  $P_2O_5$  in air-dry soils

Description of soils	Prescott's method	As determined by the modified method in the filtrates obtained from the Prescott's method	Total amount recovered by Prescott's method	Total as determined by the modified method
Sehar (sandy) soil ..	Nil	0.0412	0.0412	0.0428
Bhata (gravelly) soil ..	0.1365	0.0217	0.1582	0.1695
Sandy soil (Lillewani, Bilaspur)	0.1733	0.0569	0.2302	0.2490
Sandy soil (Bisrampur) ..	Nil	0.0390	0.0390	0.0405



(2) *American official method*<sup>1</sup> (without fusion of the soil).—According to this method removal of silica by dehydration of the HCl extract on the water-bath was not found to be complete in the case of some soils.

(3) *Russell's modification of Prescott's method*.<sup>3</sup>—According to this method it was found that taking up the dehydrated residue with  $\text{H}_2\text{SO}_4$  left some silica in solution in the case of certain soils and in the case of calcarious soils there was a heavy precipitate of  $\text{CaSO}_4$  which interfered to some extent with the estimation of  $\text{P}_2\text{O}_5$  due to the difficulty of filtration.

It was also observed that removal of silica from the HCl extracts was far more complete if the phosphates together with iron, aluminium, etc., were precipitated in the first instance by the addition of  $\text{NH}_3$  and the precipitate redissolved in HCl, than evaporating the HCl extracts as such with a view to dehydrating the silica therefrom as seen from the following results:—

TABLE III. Grams of  $\text{SiO}_2$  removed from 100 c.c. of HCl extract

HCl extract dehydrated	Dehydration of the filtrate from (1)	Total present	Dehydrated after precipitation with $\text{NH}_3$	Dehydration of the filtrate from (4)	Total present
1	2	3	4	5	6
0.0165	0.009	0.0255	0.0305	0.001	0.0315

In order to overcome the various defects mentioned above, certain modifications of the methods were tried and ultimately a modified method has been worked out which has been found to give satisfactory results as shown by the figures recorded in Table II and those in columns 8 and 9 of Table I. In addition to these results, estimations of  $\text{P}_2\text{O}_5$  in soil extracts containing varying quantities of pure potassium phosphate were carried out by the modified method and the results obtained (expressed in terms of grams per 100 c.c.) are given below:—

TABLE IV

Treatments	$\text{P}_2\text{O}_5$ added	Total $\text{P}_2\text{O}_5$ present	Total $\text{P}_2\text{O}_5$ recovered
100 c.c. soil extract only ..	Nil	0.0018	0.0018
.. .. .. ..	Nil	0.0018	0.0018
.. soil extract + $\text{KH}_2\text{PO}_4$ ..	0.0025	0.0043	0.0044
.. .. .. ..	0.005	0.0068	0.0068
.. .. .. ..	0.0075	0.0093	0.0093
.. .. .. ..	0.01	0.0118	0.0122

Results given above and those recorded in Tables I and II show that the proposed modified method which is quicker than the other methods tried, gives satisfactory results with various types of calcarious and non-calcarious light and heavy soils.

The proposed modified method is briefly described below:—

50–100 c.c. of the HCl extract of soil (prepared by digesting 20 grams of soil with 200 c.c. HCl of constant boiling point for one hour) is taken in a 600 c.c. beaker. 20 c.c. strong  $\text{HNO}_3$  is added and the contents are gently boiled for half an hour on a sand-bath. The solution is diluted to about 400 c.c. with distilled water and enough ammonia is added till all the iron, aluminium, phosphoric acid, etc., are precipitated and the solution is distinctly alkaline. The contents of the beaker are heated on a sand-bath and gently boiled for about five minutes, and filtered. The precipitate is washed with about 300 c.c. of ammoniated distilled water. The precipitate after washing is transferred back to the beaker and dissolved in 10 c.c. of strong HCl. Any precipitate sticking to the filter-paper and the funnel is dissolved by pouring 10 c.c. dilute HCl thereon and filtering it down into the beaker with hot distilled water containing a few drops of HCl. The contents of the beaker are next evaporated to dryness on a water-bath. The beaker containing the dry residue is then transferred to an air-oven and the silica is dehydrated by heating the residue for a period of three hours at a temperature of  $115\text{--}120^\circ\text{C}$ . It is important to note here that if the temperature goes higher than  $120^\circ\text{C}$ , subsequent filtration becomes very slow and difficult. The dehydrated material is next taken up with 5 c.c. strong HCl and 50 c.c. hot distilled water and heated on a water-bath for half an hour or more till the silica assumes an almost white colour. The contents are next filtered and the precipitate is washed with about 75 c.c. hot distilled water. The filtrate and the washings which are collected in a 250 c.c. beaker are concentrated to about 20 c.c. and 5 c.c. strong  $\text{HNO}_3$  is added and the heating is continued and this process is repeated till all the HCl has been removed. When this is effected the solution in the beaker becomes practically colourless. The solution is now cooled and diluted with 50 c.c. cold distilled water and ammonia is added carefully till a distinct precipitate appears in the beaker. The precipitate is redissolved by the addition of strong  $\text{HNO}_3$  and an extra quantity of 5 c.c. of the acid is added, the total volume of the solution at this stage being maintained between 70 and 80 c.c. 5 c.c. of a 50% solution of ammonium nitrate are now added and the beaker is transferred to a water-bath maintained at a temperature of  $55\text{--}60^\circ\text{C}$ . Adequate quantity of the ammonium molybdate solution prepared according to the formula prescribed by A.O.A.C.

is added and the beaker thereafter is allowed to remain in the water-bath for a period of fifteen minutes. The beaker is then removed from the water-bath and cooled. The ammonium phospho-molybdate precipitate is filtered through a gooch crucible, washed, dissolved in excess of a standard KOH solution and titrated against standard  $\text{HNO}_3$  in the usual manner.

### Summary

(1) Results of estimations of phosphoric acid in various soils by three different methods have been given.

(2) It was found that quantities of  $\text{P}_2\text{O}_5$  present in various soils as ascertained by the three different methods were very variable and that there was a lack of agreement between the results of some of the duplicate estimations carried out.

(3) A modified method for the estimation of phosphoric acid in soils' which has been found to give satisfactory results and which is quicker than the other methods tried, has been described.

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# DISTRIBUTION OF THE DIFFERENCE AND QUOTIENT OF TWO VARIATES, EACH OF WHICH INDEPENDENTLY FOLLOWS A MCKAY'S FREQUENCY FORM

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MCKAY<sup>1</sup> has shown that the frequency from

$$p(x) = \frac{\sqrt{\pi} (c^2 - 1)^{m+\frac{1}{2}}}{2^m b^{m+1} \Gamma(m+\frac{1}{2})} e^{-\frac{c}{b}x} |x|^m I_m \left| \frac{x}{b} \right| \quad (1)$$

where  $b > 0$ ,  $|c| > 1$ ,  $m + \frac{1}{2} > 0$ , and  $0 < x < \infty$  if  $c > 0$  and  $-\infty < x < 0$  if  $c < 0$ , is suitable for graduation in a definite region of the Pearsonian  $\beta_1$ - $\beta_2$  Plane. In a previous note,<sup>2</sup> I have shown that the form of this function is conserved when we proceed to the distribution of the mean of a sample of independent observations; two other distributions connected with this form are given here. I am indebted to R. C. Bose for this suggestion.

## 2. The Distribution of the Difference

Let  $x$  and  $y$  be distributed independently as in (1) and

$$p(y) = \frac{\sqrt{\pi} (\gamma^2 - 1)^{n+\frac{1}{2}}}{2^n \beta^{n+1} \Gamma(n+\frac{1}{2})} e^{-\frac{\gamma}{\beta}y} |y|^n I_n \left| \frac{y}{\beta} \right| \quad (2)$$

the constants and the variate being subject to the same conditions as in (1).

Let  $u = x - y$  (3)

Then  $\phi_u(t)$ , the characteristic function of the distribution law,  $p(u)$ , of  $u$  is given by<sup>3</sup>

$$\phi_u(t) = \int_0^\infty \int_0^\infty e^{itu} p(x) \cdot p(y) dx dy \quad (4)$$

Now it<sup>4</sup> is known that

$$\int_0^\infty e^{-t\theta\theta'} J_l(q\theta) d\theta = \frac{(2q)^\frac{1}{2} \Gamma(l+\frac{1}{2})}{\sqrt{\pi} (p^2+q^2)^{l+\frac{1}{2}}} \quad (5)$$

provided that  $R(l) > 0$ ; changing  $q$  into  $iq$ , we have

$$\int_0^\infty e^{-p\theta\theta'} I_l(q\theta) d\theta = \frac{(2q)^l \Gamma(l + \frac{1}{2})}{\sqrt{\pi} (p^2 - q^2)^{l + \frac{1}{2}}}. \quad (6)$$

By suitably transforming the parameters  $p$ ,  $q$  and  $l$ , first into  $b$ ,  $c$  and  $m$ , and then into  $\beta$ ,  $\gamma$  and  $n$ , we find that

$$\phi_u(t) = \frac{(c^2 - 1)^{m + \frac{1}{2}} (\gamma^2 - 1)^{n + \frac{1}{2}}}{\{(c - ibt)^2 - 1\}^{m + \frac{1}{2}} \{(\gamma + i\beta t)^2 - 1\}^{n + \frac{1}{2}}}, \quad (7)$$

since the change in sign of the variate,  $x$  or  $y$  affects only the exponential part.

As  $|c - ibt| > 1$  and  $|\gamma + i\beta t| > 1$ ,

we can expand  $\phi_u(t)$  in powers of  $(c - ibt)^{-1}$  and  $(\gamma + i\beta t)^{-1}$  and get

$$\phi_u(t) = \sum_{r=0}^{\infty} \sum_{s=0}^{\infty} \frac{(c^2 - 1)^{m + \frac{1}{2}} (\gamma^2 - 1)^{n + \frac{1}{2}} (m + \frac{1}{2})_r (n + \frac{1}{2})_s}{r! s! (c - ibt)^{2m + 2r + 1} (\gamma + i\beta t)^{2n + 2s + 1}} \quad (8)$$

The distribution law of  $u$  is, therefore, given by<sup>5</sup>

$$\begin{aligned} p(u) &= \frac{1}{2\pi} \int_{-\infty}^{\infty} e^{-iut} \phi_u(t) dt, \\ &= (c^2 - 1)^{m + \frac{1}{2}} (\gamma^2 - 1)^{n + \frac{1}{2}} \sum_{r=0}^{\infty} \sum_{s=0}^{\infty} \frac{(m + \frac{1}{2})_r (n + \frac{1}{2})_s}{r! s!} \\ &\quad \times \frac{1}{2\pi} \int_{-\infty}^{\infty} \frac{e^{-iut} dt}{(c - ibt)^{2m + 2r + 1} (\gamma + i\beta t)^{2n + 2s + 1}} \end{aligned} \quad (9)$$

the inter-change of the limits of summation and integration being obviously justified.

Putting  $c - ibt = -\frac{b}{u} z$ , we find that

$$\begin{aligned} &\frac{1}{2\pi} \int_{-\infty}^{\infty} \frac{e^{-iut} dt}{(c - ibt)^\lambda (\gamma + i\beta t)^\mu} \\ &= \frac{e^{-\frac{c}{b}u} u^{\lambda-1}}{b^\lambda \beta^\mu (c/b + \gamma/\beta)^\mu} \cdot \frac{1}{2\pi i} \int_{-\frac{c}{b}u - i\infty}^{-\frac{c}{b}u + i\infty} \frac{e^{-z} dz}{(-z)^\lambda [1 + z\{u(c/b + \gamma/\beta)\}]^\mu} \end{aligned}$$

$$= \frac{u^{\frac{1}{2}(\lambda + \mu) - 1} e^{-\frac{1}{2}(c/b - \gamma/\beta)u}}{b^\lambda \beta^\mu \left(\frac{c}{b} + \frac{\gamma}{\beta}\right)^{\frac{1}{2}(\lambda + \mu)} \Gamma(\lambda)} W_{\frac{\lambda - \mu}{2}, \frac{1 - \lambda - \mu}{2}} \left\{ u \left( \frac{c}{b} + \frac{\gamma}{\beta} \right) \right\} \quad (10)$$

where  $W_{k,k'}(z)$  is the Whittaker's confluent hypergeometric function.<sup>6</sup>

Since  $W_{k,-k'}(z) = W_{k,k'}(z)$ ,

$$(a)_r = \Gamma(a+r)/\Gamma(a),$$

and

$$\sqrt{\pi} \Gamma(2z) = 2^{2z-1} \Gamma(z) \Gamma(z + \frac{1}{2}), \quad (11)$$

we get, after combining (9) and (10),

$$p(u) = \frac{\sqrt{\pi} (c^2 - 1)^{m+\frac{1}{2}} (\gamma^2 - 1)^{n+\frac{1}{2}} u^{m+n} e^{-\frac{1}{2}(c/b - \gamma/\beta)u}}{2^{2m} b^{2m} \beta^{2n} \Gamma(m+\frac{1}{2}) \Gamma(n+\frac{1}{2}) (c/b + \gamma/\beta)^{m+n+1}} \\ \times \sum_{r=0}^{\infty} \sum_{s=0}^{\infty} \frac{\Gamma(n+s+1) u^{r+s} W_{k,k'} \{u(c/b + \gamma/\beta)\}}{r! s! 2^{2r} \Gamma(m+r+1) 6^{2r} \beta^{2s} (c/b + \gamma/\beta)^{r+s}}, \quad (12)$$

$$\left. \begin{aligned} \text{where } k &= m+r-n-s \\ k' &= m+n+r+s+\frac{1}{2} \end{aligned} \right\}.$$

If the distribution laws of  $x$  and  $y$  be the same, so that

$$\beta = b, \gamma = c, \text{ and } n = m,$$

(12) reduces, after simplification, to

$$p(u) = \frac{(c^2 - 1)^{2m+1} u^{2m}}{2^{2m} (bc)^{2m+1} \Gamma(2m+1)} \cdot \sum_{r=0}^{\infty} \sum_{s=0}^{\infty} \frac{(m+\frac{1}{2})_s u^{r+s} W_{k,k'}(2uc/b)}{r! s! 2^{3r+s} (bc)^{r+s} (m+1)_r} \quad (13)$$

where  $k = r - s$ ,  $k' = 2m + r + s + \frac{1}{2}$

### 3. The Distribution Law of the Quotient

Let  $x$  and  $y$  be distributed independently as in the previous section and let

$$\omega = \frac{x}{y}, \quad (14)$$

$$\text{Put } v = \log_e \omega = \log_e x - \log_e y, \quad (15)$$

the logarithms being referred to the base  $e$ .

Then the characteristic function of the distribution law of  $v$  is given by

$$\phi_v(t) = \int_0^{\infty} \int_0^{\infty} x^{it} y^{-it} p(x) \cdot p(y) dx dy. \quad (16)$$

Now it is known that<sup>7</sup>

$$\int_0^{\infty} e^{-p\theta} \theta^{\mu-1} I_\nu(q\theta) d\theta = \frac{\left(\frac{1}{2} \frac{q}{p}\right)^\nu \Gamma(\mu + \nu)}{p^\mu \Gamma(\nu + 1)} \times {}_2F_1\left(\frac{\mu + \nu}{2}, \frac{\mu + \nu + 1}{2}; \nu + 1; \frac{q^2}{p^2}\right). \quad (17)$$

Hence substituting suitable values for  $p$ ,  $q$ ,  $\mu$  and  $\nu$ , and making use of (11), we get

$$\frac{\sqrt{\pi} (c^2 - 1)^{m+\frac{1}{2}}}{2^m b^{m+1} \Gamma(m + \frac{1}{2})} \int_0^{\infty} e^{-\frac{c}{b}x} x^{m+it} I_m\left(\frac{x}{b}\right) dx \\ = \frac{(c^2 - 1)^{m+\frac{1}{2}} b^{it} \Gamma(2m + 1 + it)}{\Gamma(2m + 1) c^{2m+1+it}} {}_2F_1\left(\frac{2m + 1 + it}{2}, \frac{2m + 2 + it}{2}; m + 1; \frac{c^{-2}}{c^{-2}}\right). \quad (18)$$

Expanding the hyper-geometric function and using (11) again, both in the numerator and the denominator we can write (18) in the form

$$\frac{(c^2 - 1)^{m+\frac{1}{2}} b^{it} \Gamma(m + 1)}{\Gamma(2m + 1) c^{2m+1+it}} \sum_{r=0}^{\infty} \frac{\Gamma(2m + 2r + 1 + it)}{r! 2^{2r} \Gamma(m + r + 1)} \frac{1}{c^{2r}} \quad (19)$$

Similarly

$$\int_0^{\infty} y^{-it} p(y) dy = \\ = \frac{(\gamma^2 - 1)^{n+\frac{1}{2}} \beta^{-it} \Gamma(n + 1)}{\Gamma(2n + 1) \gamma^{2n+1-it}} \sum_{s=0}^{\infty} \frac{\Gamma(2n + 2s + 1 - it)}{s! 2^{2s} \Gamma(n + s + 1)} \cdot \frac{1}{\gamma^{2s}}, \quad (20)$$

so that

$$\phi_v(t) = \frac{(1 - c^{-2})^{m+\frac{1}{2}} (1 - \gamma^{-2})^{n+\frac{1}{2}} \Gamma(m + 1) \Gamma(n + 1) \left(\frac{b}{c} \frac{\gamma}{\beta}\right)^{it}}{\Gamma(2m + 1) \Gamma(2n + 1)} \\ \times \sum_{r=0}^{\infty} \sum_{s=0}^{\infty} \frac{\Gamma(2m + 2r + it + 1) \Gamma(2n + 2s + 1 - it) c^{-2r} \gamma^{-2s}}{r! s! 2^{2r+2s} \Gamma(m + r + 1) \Gamma(n + s + 1)} \quad (21)$$

Hence the distribution law of  $v$  is given by

$$p(v) = \frac{1}{2\pi} \int_{-\infty}^{\infty} e^{-ivt} \phi_v(t) dt. \quad (22)$$

But we know<sup>8</sup> that

$$\begin{aligned} & \frac{1}{2\pi} \int_{-\infty}^{\infty} z^{-it} \Gamma(p+it) \Gamma(p-it) dt \\ &= \frac{z^p}{2\pi i} \int_{p-i\infty}^{p+i\infty} z^{-\theta} \Gamma(\theta) \Gamma(p+q-\theta) d\theta \\ &= \frac{\Gamma(p+q) z^p}{(1+z)^{p+q}}, \end{aligned} \quad (23)$$

So that, putting  $z = \lambda e^v$ , we get

$$\begin{aligned} & \frac{1}{2\pi} \int_{-\infty}^{\infty} (\lambda e^v)^{-it} \Gamma(p+it) \Gamma(q-it) dt \\ &= \frac{\Gamma(p+q) (\lambda e^v)^p}{(1+\lambda e^v)^{p+q}}. \end{aligned} \quad (24)$$

Adjusting suitably the values of  $p, q$  and  $\lambda$  in (24) we get from (22),

$$\begin{aligned} p(v) &= \frac{(1-c^{-2})^{m+\frac{1}{2}} (1-\gamma^{-2})^{n+\frac{1}{2}} \Gamma(m+1) \Gamma(n+1)}{\Gamma(2m+1) \Gamma(2n+1)} \sum_{r=0}^{\infty} \sum_{s=0}^{\infty} \frac{1}{r! s! 2^{2r+2s}} \\ &\times \frac{\Gamma(2m+2n+2r+2s+2)}{\Gamma(m+r+1) \Gamma(n+s+1)} \frac{\left(e^v \cdot \frac{c\beta}{b\gamma}\right)^{2m+2n+1}}{c^{2r} \gamma^{2s} \left\{1 + \frac{c\beta}{b\gamma} e^v\right\}^{2m+2n+2r+2s+2}} \end{aligned} \quad (25)$$

Finally putting  $e^v = \omega$  and breaking up  $\Gamma(2m+2n+2r+2s+2)$  with the help of (11) we get the distribution law of  $\omega$  as

$$\begin{aligned} p(\omega) &= \frac{(1-c^{-2})^{m+\frac{1}{2}} (1-\gamma^{-2})^{n+\frac{1}{2}} \Gamma(2m+2n+2) \left(\frac{c\beta}{b\gamma}\right)^{2m+1} \omega^{2m}}{\Gamma(2m+1) \Gamma(2n+1) \left\{1 + \frac{c\beta}{b\gamma} \omega\right\}^{2m+2n+2}} \\ &\times \sum_{r=0}^{\infty} \sum_{s=0}^{\infty} \frac{(m+n+1)_{r+s} (m+n+\frac{3}{2})_{r+s}}{r! s! (m+1)_r (n+1)_s} \left(\frac{\beta\omega}{b\gamma + c\beta\omega}\right)^{2r} \left(\frac{b}{b\gamma + c\beta\omega}\right)^{2s}, \\ &= \frac{(1-c^{-2})^{m+\frac{1}{2}} (1-\gamma^{-2})^{n+\frac{1}{2}} (c\beta)^{2m+1} \omega^{2m}}{B(2m+1, 2n+1) (b\gamma)^{2m+1} (b\gamma + c\beta\omega)^{2m+2n+2}} \\ &\times F_4 \left[ \begin{matrix} m+n+1, m+n+\frac{3}{2}; \\ m+1, n+1; \end{matrix} \frac{\beta^2 \omega^2}{(b\gamma + c\beta\omega)^2}, \frac{b^2}{(b\gamma + c\beta\omega)^2} \right] \end{aligned} \quad (26)$$



## 4. These Distributions lead to some special cases also

(i) Since

$$\lim_{c \rightarrow \infty} I_m \left( \frac{\lambda x}{c} \right) = \frac{\left( \frac{1}{2} \frac{\lambda x}{c} \right)^m}{\Gamma(m+1)}, \quad (27)$$

we find that (1) reduces with the help of (11) to the Type III curve: i.e.,

$$p_1(x) = \frac{\lambda^{2m+1}}{\Gamma(2m+1)} e^{-\lambda x} x^{2m}, \quad 0 < x < \infty \quad (28)$$

where  $\lambda = c/b$ .

Similarly if  $\mu = \gamma/\beta$ , and  $\gamma \rightarrow \infty$ , (2) reduces to

$$p_1(y) = \frac{\mu^{2n+1}}{\Gamma(2n+1)} e^{-\mu y} y^{2n}, \quad 0 < y < \infty \quad (29)$$

and corresponding to (13) and (26) we have the results

$$p_1(u) = \frac{\lambda^{2m+1} \mu^{2n+1} \mu^{m+n} e^{-\frac{1}{2}(\lambda+\mu)u}}{(\lambda+\mu)^{m+n+1} \Gamma(2m+1)} \cdot W_{m-n, m+n+\frac{1}{2}} \{(\lambda+\mu)u\} \quad (30)$$

and

$$p_1(\omega) = \frac{(\lambda/\mu)^{2m+1}}{B(2m+1, 2n+1)} \cdot \frac{\omega^{2m}}{\left(1 + \frac{\lambda}{\mu} \omega\right)^{2m+2n+2}} \quad (31)$$

Particular cases of these two results have been given by Kullback<sup>9</sup>.

(ii) Again putting  $\frac{c}{b} = \text{constant } \lambda$ , say, and after making  $c \rightarrow \infty$  put  $m = 0$  then (1) reduces to

$$p_2(x) = \nu e^{-\nu x}, \quad 0 < x < \infty \quad (32)$$

which is Poisson's law of error. For this we have

$$\begin{aligned} p_2(u) &= \frac{\lambda\mu}{\lambda+\mu} e^{-\frac{1}{2}(\lambda+\mu)u} W_{0, \frac{1}{2}}(\overline{\lambda+\mu} u) \\ &= \frac{\lambda\mu}{\lambda+\mu} e^{-\lambda u} \text{ where } \left(\mu = \frac{\nu}{\beta}\right) \end{aligned} \quad (33)$$

since

$$W_{0, \frac{1}{2}}(z) = e^{-z^2}.$$

Similarly

$$p_2(\omega) = \frac{\lambda\mu}{(\mu + \lambda\omega)^2} \quad (34)$$

Formulae (33) and (34) can be easily verified directly, or can be seen to be equivalent (except for the constant term) to those given by Weida.<sup>10</sup>

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# THE CONCEPT OF *REKHĀ* IN *JNĀNEŚVARĪ*

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## I. The Poet-critic *Jnāneśvara* :

*Jnāneśvarī* is an exquisite work of art in the realm of ancient Marāṭhī Poetry. It is a poem, having the *Bhagvadgītā* for its theme and was composed in A.D. 1290 by *Jnāneśvara*—the pioneer saint-poet in Mahārāshṭra. Apart from its being an inexhaustible store-house of poetic flourish, it is distinguished by the original way in which the author has incidentally expounded some of the principles of literary criticism. It is proposed in this paper to interpret the term *Rekhā* in *Jnāneśvarī* with a view to investigating the concept of *Rekhā* as enunciated by the poet-critic *Jnāneśvara*.

## II. *Rekhā* means Method of Delineation :

The term *Rekhā* occurs in three verses in *Jnāneśvarī*. The introduction to this work begins with a symbolical description of the god Gaṇeśa. The poet identifies the image of Gaṇeśa with *śabda-brahma*, his body with the *varṇas* or the letters and he continues the metaphor further when he says:

स्मृति तेचि अवयव । रेखा<sup>1</sup> अंगिकभाव

तेय लावण्याची देव । अर्थशोभा ॥<sup>2</sup>

Oh God, *Smṛitis* are your limbs, *rekhā* is the expression of the emotion of your limbs (and) there (*i.e.*, in *rekhā*) the adornment of sense is the charm of your beauty.

Now the question is: what is the meaning of the word *rekhā* in the above passage? Rājwāde fixes the meaning as poetic composition (*kāvya-racanā*)<sup>3</sup>. A close study of the sustained metaphor will reveal that the word *kāvya* has found place in it, the corresponding *upameya* being the tiny bells of the girdle of the god Gaṇeśa. Again, *racanā* means composition or *bandha*

<sup>1</sup> The reading *dekhā* (which means 'see') is prevalent in place of *rekhā* but when it is accepted no *upamāna* is left for the corresponding *upameya aṅgika-bhāva*. The Mukundarājī recension of *Jnāneśvarī* edited by the late V. K. Rājwāde deserves credit for supplying the appropriate reading.

<sup>2</sup> *Jñān.* (Rāj. Edn.), I. 4.

<sup>3</sup> See Rājwāde's Preface to *Jñān.*, p. 87.

and the *nāgara padya-bandha* (or the poetic composition) has actually been identified with the coloured costume in the sixth verse:

पद्यबंध नागर । तेचि रंगाचिल्ले भंबर ॥<sup>4</sup>

Evidently, the meaning of the word *rekhā* as intended by its author must be something else than 'poetic composition', and we get its suggestion from the corresponding *upameya aṅgika-bhāva*, which means the expression of the emotions through the limbs. If *Smṛitis* are the limbs and if the excellence of the meaning (in *Smṛitis*) is the charm of the beautiful element in the image of god, *rekhā* may probably mean the method or the way of delineation or portrayal.

According to Monier Williams<sup>5</sup> the word *rekhā* does mean delineation or sketch in *kāvya* literature. Perhaps Jñāneśvara is using the same word here with an emphasis on the way in which that delineation is effected.

### III. It is the Style of expressing Sentiments :

There are two more verses wherein the same term occurs. In the colophon of the fourth chapter, the poet is requesting the audience<sup>6</sup> to pay attention to the narration :

जे साहित्य आणि शांति । हे रेखा दिसे बोलती  
जेसी लावण्यगुणयुवती<sup>7</sup> । आणि पतिव्रता ॥<sup>8</sup>

Just as a young woman who is endowed with the qualities of beauty is devoted to her husband, so looks this *rekhā* of speech accompanied by poetic embellishments<sup>9</sup> and Quietistic sentiment. Since devotion to one's husband is a quality of the soul and beauty is a quality of the body Jñāneśvara seems to make a veiled suggestion of the *Śānta-rasa* being the soul and the figures of speech being the ornaments of poetry. In this verse also *rekhā* seems to mean the method of speech by which the figures and sentiments are delineated.

<sup>4</sup> *Jñān.* (Rāj. Edn.), I. 6. The meaning of the word 'ambar' given by Rājwāde as 'canopy' is misleading and incorrect. See my thesis : *Marāṭhiche Sāhityaśāstra*, p. 71.

<sup>5</sup> See *sub voce*—*rekhā*—in his *Sanskrit-English Dictionary*.

<sup>6</sup> *Jñāneśvari* is a pioneer work in the *nirūpaṇa* form of poetry wherein the narration takes the form of discourse.

<sup>7</sup> The reading *lāvaṇyagunakulavati* in the traditional texts like those of Sākhare and others is more plausible but the poet may have intended the present reading only.

<sup>8</sup> *Jñān.* (Rāj. Edn.), IV. 215.

<sup>9</sup> The term *Sāhitya* always meant materials for adornment of poetry in the ancient Marāṭhī poetry and now it has come to mean "A collection of materials for the production or performance of anything" which as Apte's *Sanskrit-English Dictionary* would say is a doubtful sense.

The sixth chapter of *Jñāneśvarī* is introduced with the description of the collocation of letters that are full of *rasa* :

नवल बोलति ये रेखोची बाहाणी । दावितां डोलियां हीं पुरों लागे आणि  
ते म्हणति उघडिली कां खाणि । रूपांची हे ॥<sup>10</sup>

What a wonder indeed, that if the flow of *rekḥā* in speech is shown to the eyes even their desire will be satisfied and they will say "Here, a mine of beauties has been laid bare !" The word *vāhāṇi* (flow) suggests clearly that *rekḥā* means literary style and since the subject under discussion is the arrangement of letters full of *rasa*, *rekḥā* can be taken to mean the style of expressing *rasas*.

#### IV. The Conception of *Rīti* in Sanskrit Poetics :

It is worthwhile to compare and contrast *Rekhā* with the term *Rīti* in Sanskrit literary criticism. Vāmana is the first rhetorician in Sanskrit who has propounded the term *Rīti*. He declared in his *Kāvyaālaṃkārasūtras* that *Rīti* constituted the Soul of Poetry. He defined *Rīti* as *viśiṣṭa padaracanā*, the *viśeṣa* being *Guṇas*. It will be seen that Vāmana lays more stress on the verbal excellences or the diction, rather than on the artistic expression of sentiments or the style as we would roughly call it. Hence Dr. De remarks in his book on *Sanskrit Poetics*<sup>11</sup> "It should be observed that the term *Rīti* is hardly equivalent to the English word 'style', by which it is often rendered, but in which there is always a distinct subjective valuation... But at the same time, the *Rīti* is not, like the style, the expression of poetic individuality, as is generally understood by Western criticism, but it is merely the outward presentation of its beauty called forth by a harmonious combination of more or less fixed literary excellences."

This conception of *Rīti* by Dr. De, however, has been challenged by Dr. V. Raghavan in his contribution on *RĪTI*.<sup>12</sup> He proposes to make clear "that it is neither impossible nor incorrect to render *Rīti* by the English word style, that *Rīti* comprehends not only *Guṇas* but *Alaṃkāras* and *Rasas* also, that *Rītis* are not so few as two or six but really as infinite as poets and that at least one or two *Alaṃkārikas* and poets have related *Rīti* to the poet."

A critical student of the above controversy between the learned writers will observe that Dr. De has restricted his arguments within the narrower

<sup>10</sup> *Jñān.* (Rāj. Edn.), VI. 6.

<sup>11</sup> *Sanskrit Poetics*, Vol. II, pp. 115 and 116.

<sup>12</sup> See "Rīti" by Dr. V. Raghavan in *Kuppuswāmī Śāstrī Commemoration Volume*, p. 95.

limits of the term *Rīti* as it is dealt with by the earlier writers, while Dr. Raghavan has taken a broader view of its development from the earliest rhetoricians Bhāmaha and Daṇḍin who have not even mentioned the term,<sup>13</sup> down to its greatest exponent Kuntaka, who in his zeal to bring every principle of literary criticism under *Vakrokti*, has not only cast off the old names but has overhauled the whole system and has given a new orientation to the theory of *Rīti*. From the view-point of historical study, we must take the doctrine of *Rīti* as it was enunciated by the early authors without any reference to its further evolution. In fact, the *Rītivāda* is a landmark in the evolution of literary criticism in Sanskrit, although its authors only faintly realized the soul or the fundamental principle underlying poetry. Ānandavardhana has rightly pointed out:

अस्फुटस्फुरितं काव्यतत्त्वमेतद् यथोदितम् ।  
अशक्नुवन्निर्व्याकर्तुं रीतयः सम्प्रवर्तिताः ॥<sup>14</sup>

Since the pre-Ānandavardhana *Ālaṅkārikas* were rather ignorant of the real conception of *Rasa* and its place in the theory of poetry, it is unjust to attribute to them the later associations of that particular doctrine. It is, therefore, an anachronism, so far as the term *Rīti* is concerned, to explain the *Arthaguṇas* of Vāmana to be so comprehensive as to reach up to *Rasa*—as Dr. Raghavan has done. Dr. De seems to be perfectly justified when he says that the *Rīti* is merely the outward presentation of... beauty called forth by a harmonious combination of more or less fixed literary excellences.

#### V. Distinction between *Rīti* and *Rekhā* :

Now the essential distinction between the *Rīti* of Vāmana and the *Rekhā* of Jnāneśvara will be apparent. A cursory observation of the three above verses by Jnāneśvara will show that he has in every case related the term to the beautiful element or *Rasa* in poetry. In fact, he has actually associated the term with *lāvaṇya* and *arthaśobhā* in the first, *lāvaṇya* and *Sānta-rasa* in the second and *rūpancī khāṇi* (mine of beauties) in the third verse. Evidently, the *Rekhā* is more comprehensive than the *Rīti* which is mere 'diction' and is not only more akin to the word 'style' in English literature but it connotes something more — an artistic expression of the *rasas*, which idea is not suggested by the word style.

That Jnāneśvara has not borrowed the concept of *Rekhā* from Sanskrit *Rītivāda* can be proved beyond doubt. Since he has made an abundant

<sup>13</sup> Bhāmaha only mentions Vaidarbha and Gauḍa while Daṇḍin says there are many literary *Mārgas* with fine distinctions which mark off one mode from another (*Kāvyaadarśa*, I. 40).

<sup>14</sup> *Dhvanyāloka*, III. 52.

use of Sanskrit terminology he could have very well mentioned the term *Rīti* itself if he wanted to support the *Rītivāda* in Sanskrit.

#### VI. Probable Origin of the term *Rekhā* in Sanskrit Poetry :

Although the Sanskrit Poetics is unfamiliar with the word *rekhā*, it (the word *rekhā*) is not altogether new to the classical Sanskrit poetry. Kālidāsa, for instance, has used it in his *Abhijnāna-Śākuntala* :

यद्यत्साधु न चित्रे स्यात्क्रियते तत्तदन्यथा ।

तथापि तस्या लावण्यं रेखया किञ्चिदन्वितम् ॥<sup>15</sup>

It is noteworthy that just like *Jnāneśvarī* this śloka also connects the word *rekhā* with *lāvaṇya* or the beautiful element. The following stanza is quoted by the commentator Rāghavabhaṭṭa while explaining the above word :

शिरोनेत्रकरादीनामङ्गानां मेलने सति ।

कायस्थितिर्यतो नेत्रहरा रेखा प्रकीर्तिता ॥<sup>16</sup>

According to Kālidāsa, therefore, *rekhā* means sketch or outline and it falls too short of the sense attributed to it by Jnāneśvara.

Again, the word appears in *Bālarāmāyaṇa* by Rājaśekhara :

बभूव वल्मीकभयः पुरा कवि-

स्ततः प्रपेदे भुवि भर्तुमण्डताम् ।

स्थितः पुनर्यो भवभूतिरेखया

स वर्तते संप्रति राजशेखरः ॥<sup>17</sup>

In this verse *rekhā* seems to mean appearance and has hardly any bearing on the sense that Jnāneśvara has ascribed to the word.

#### VII. *Rekhā*—a distinctive Coinage of Jnāneśvarī Origin :

It will be evident from the above references that the Marāṭhī poet has assigned an original connotation to the word *Rekhā*. The term *Rekhā* meaning style or the mode of expressing sentiments is a distinctive coinage of Jnāneśvarī origin and the Concept of *Rekhā* as enunciated by Jnāneśvara is far more comprehensive than the Doctrine of *Rīti* set forth by Vāmana in Sanskrit literary criticism.

<sup>15</sup> Act VI. śl. 14; also see I. 9, VI. 6, 7 and 15.

<sup>16</sup> Quoted from *Saṅgīta-Ratnākara* by Śārṅgadeva.

<sup>17</sup> *Bālarāmāyaṇa*, Act I. śl. 16.

## KHĀKĪ—AN UNKNOWN MYSTIC POET OF URDU

BY GHULĀM MÚSTAFĀ KHĀN, M.A., LL.B.

### *His Life*

KHĀKĪ, is a great mystic poet of Urdu. We have got no record<sup>1</sup> of him except what we can gather from his work. His complete 'dīwān' is preserved in the Ḥabībganj Library (Dist. Aligarh) and is perhaps the only copy available so far. Its 91 folios, written in a very beautiful 'naskh' script, contain more than 1,800 verses. The colophon is as follows:—

تمت تمام شد۔ دیوان رنگین من کلام توفیق انجام سید محمد قادری عزت مدن صاحب<sup>2</sup>  
ابن سید جمال اللہ قادری قلم طلسم العالی۔  
مخطوط نوشتہ سید حسین قادری عرف شاہ میاں، بتاریخ دہم ربیع الاول ۱۲۸۵ھ بصری  
قلم شد۔

From this colophon the following points are to be noted:—

(a) The name of the poet ("Khākī" being the pen-name) was Sayyid Muḥammad, *alias* "Maḍan Ṣāhib".

(b) His father's name was Sayyid Jamālu'llāh, who was his spiritual leader as well. This we gather from his following verses:—

جمال اللہ مرشد جب دیکھا کر پیر کوں خاک کی۔ کیا ہے تجکوں او محرم بھی نامحرم سوں کی طلب  
خاک کی جمال ذات اپس پیر کوں سمجھ۔ "تجکوں کیا ہے مست جوان پیر سوں ملا  
اپنے خاک کی کتیں جمال اللہ۔ نت پیاسوں ایسے ملا دینا

(c) The term "Qāḍirī", added to the name of Khākī and to that of his father, shows that they belonged to the "Qāḍirī" order of saints, tracing origin from 'Abdu'l Qāḍir Jīlānī (d. 561/1166), in whose praise there are several panegyrics by this poet; one of the finest of them begins thus:—

<sup>1</sup> Maulana 'Abdu'l Ḥai has tried (in his book *Gul-i-Ra'na*, p. 11) to identify this Khākī to one, mentioned by Mīr Ḥasan in his biography. But his conclusion appears to be wrong, as we will see later.

<sup>2</sup> Mr. Tamkin (in his *Tadhkira-i-Rekhti*, p. 36) has read it as "Bu'dde Ṣāhib".



توں بادشاہِ دو جہاں یا غوثِ الاعظم دستگیر۔ ہے لامکاں تیرا مکاں یا غوثِ الاعظم دستگیر

And like a faithful devotee, Khākī asserts to have that saint's spiritual favour every moment:

یو تصدق ہے غوثِ الاعظم کا      فیص ان کا ہر آن ہے ہر حق

(d) The scribe was some Sayyid Ḥusain Qāḍirī (most probably a relative of Khākī), *alias* "Shāh Miyān", who completed the 'dīwān' on the 10th of Rabi I, A.H. 1182 (= Monday, the 25th July, A.D. 1768).

(e) The words مطلبہم العالی (= may his great shadow be lasting!)—an expression to be used *only* for a living person—show that Sayyid Muḥammad "Khākī" was alive at least upto the time when the scribe completed his 'dīwān', *i.e.*, upto the year 1182/1768.

Besides the above authentic accounts of Khākī, we find some apocryphal anecdotes about him in Berar (then in the Deccan) as well. But before writing them I would like to judge the statement of Maulānā 'Abdu'l Hai who tries<sup>3</sup> to identify our Khākī with one, mentioned in Mīr Ḥasan's *Tadhkira*. In the latter, which was written between<sup>4</sup> 1188/1774 and 1192/1778, that Khākī is said to have lived at Delhi in the reign of Jahāngīr. The actual words, thereof, are as follows:—

خاکی۔ تخلص مردے بود درویش از شاہجہاں آباد در عہدِ جہانگیر۔ احوالِ معلوم  
نست۔ از یک مردِ پیرے این شعرش بگوشِ خورو، از دست۔  
ٹھانی ہے اپنے سن میں اب تو ہی ستر کن تجھ پیچ کی گلی میں خاکی کو خاکش ہونا

According to the said Maulānā, there is a mistake in this passage, *i.e.*, there should be the word "Ālamgīr" in place of "Jahāngīr." Hence this Khākī, as he says, flourished in the reign of 'Ālamgīr (Aurangzeb) and not in that of Jahāngīr. But if we judge the date of our poet, even this view of the Maulānā does not appear to be correct, because we have already seen in the colophon of our poet's work that he was alive at least upto the year 1182/1768, *i.e.*, much after the death of Aurangzeb even. This clearly shows

<sup>3</sup> *Gul-i-Ra'na*, pp. 11–12, footnotes.

<sup>4</sup> Mīr Ḥasan's *Tadhkira*, M. U. Aligarh Press, 1922, p. 2.

<sup>5</sup> *Ibid.*, p. 92.

that our *Khākī* was quite different from that poet of the same pen-name who had lived either in the reign of Jahāngīr or in that of 'Ālamgīr. Moreover, the verse, as quoted by Mīr Ḥasan (and mentioned in the above passage), to have been composed by that poet, does not exist in the complete work of our *Khākī*. On the other hand, our poet did belong to the Deccan (and not to Delhi), as it is quite evident from his language. Had he been of Delhi, Mīr Ḥasan could have easily given us some information about him, because both of them would have been of the same age and place. Besides the language of our poet, one more point helps us in taking him to be a resident of the Deccan and it is this: Throughout his whole work we do not find any reference about or praise of any Indian saint, except one panegyric, which speaks of the greatness of Ḥaḍraṭ Gesū Ḍarāz "Baḍa Nawāz" (d. 825<sup>h</sup>/1422) of Gulbarga (Deccan) and it begins thus:

نزل رحمت رب کریم بندہ نواز      تو فیض بخش ہے گنج ہیم بندہ نواز

The presence of this panegyric suggests our poet's both local and spiritual relations with that saint. Now, when it is proved that our poet had been a resident of the Deccan, the anecdotes related to him in Berar (Deccan) appear to be genuine, because there is none, except him, of the same pen-name, age and qualities in the whole of the Deccan. Any way, for the sake of an interesting (though apocryphal) record I would mention those stories here:—

(a) About 175 years ago *Khākī*, as a wanderer, came to Argāon,<sup>7</sup> a place in the district of Yeotmal (Berar) and close to the boundaries of the modern Deccan. There one gardener was sitting along with his wife. When they gave him some food, he prayed for their everlasting prosperity. Ever since that date the gardener's progeny, even upto this day, lead there a rich life in their profession.

(b) During the short stay of *Khākī* at Argāon, his miraculous fame reached all the neighbouring towns. So, one low-caste Hindū, namely, Malkū, attended him every day from Ajanṭi, a place about nine miles away from Argāon. *Khākī*, too, liked him very much and turned him to be a saint. That Malkū then led a life of seclusion, and, on his death, was

<sup>6</sup> *Urdu-i-Qadīm*, p. 23.

<sup>7</sup> On the motor-road between Amraoti and Yeotmal there is a village Ner in the middle. From that place, at a distance of about six miles, the village Ajanti is situated, and Argāon lies about nine miles away from it.

buried at Ajanṭī, where, like at Aṛgāon, lies the artificial grave of Khākī<sup>a</sup> as well.

(c) The third is the popular anecdote assigned to other saints also as to Khākī, viz.:

Once Khākī was praying when suddenly he put his hand under his prayer-carpet, and, after a while, when he took it out it was all besmeared with mud. People asked its reason, then he told them that he had saved some ship from sinking. And it so happened that after some days a certain officer of the same ship came to thank Khākī for that kindness.

### *His Works*

The Ḥabībganj MS. of Khākī's 'dīwān' of 91 folios (each page having usually ten verses) contains the following varieties of his poetry:—

(a) Ghazals.

(b) Qaṣīḍas (panegyrics), several in praise of the Holy Prophet and 'Abdu'l Qāḍir Jilānī; one in praise of Ḥaḍraṭ 'Alī, the Fourth Pious Caliph, beginning with:—

صاحب شجاع و ہبلی بے شک لی اللہ علی  
نیر ہے جرات سوس کجی بے شک لی اللہ علی

There is also one panegyric in praise of Ḥaḍraṭ Gesū Ḍarāz "Baṇḍa Nawāz", as has already been mentioned above.

(c) Mu'sṭazāḍs; and

(d) one 'mathnawī' of 55 verses, having allegorical interpretations for some religious doctrines. Its opening lines are as follows:—

<sup>a</sup> Khākī's real grave is said to be at Pāk-Patan (Punjab). There is again one doubtful anecdote about Khākī in Jubbulpore, C.P., where his *alias* "Maḍan Ṣāhib" (as we have seen in the colophon) is popular. After him "Maḍan Maḥal" of Gaṛha (Jubbulpore) is said to be known. He is said to have lived as a bachelor throughout. But his younger brother Sayyid Kallan Shāh Qāḍirī's progeny still lives at Gaṛha. This Kallan Shāh, as I have seen his Persian *sanaḍ* with his great-grandson Sakhāwaṭ 'Alī Qāḍirī, had been granted two villages Konda and Baḍanpūr in 1773 by the Gond Rāja Nizām Shāh (d. 1776). But for lack of any historical record we cannot, in any way, identify this "Maḍan" to our Khākī.

کہوں کیا زبانوں خدا کی صفت      صفت ہو کہ موجود ہے سب جگت  
 خدا کوں صفت سب سزاوار ہے      وہی جسز وکل کا سدا یا ہے  
 بنے حق کو پایا جہاں میں نہیں،      رہے ہو کے اعلیٰ مشرتک و ہیں  
 سمجھ کر آپس کے اول جیو کوں      آپس جیو میں دیکھ لے پیو کوں  
 فرائض تو باطن کے ہیں پانچ جان،      بیاں کھول کرتا ہوں س کوں بچان  
 محمد کے جب نور میں رب کا نور      دسے پر سچ او ہی کلمہ ظہور  
 مثال اس کی کہتا ہوں کر گیان توں      اسے سن آتا دل کے توں کان ہوں  
 کچھوں ماہ کے نور میں سچ دسے      کہ خورشید کا نور اس میں بے  
 جو نور علیٰ نور حق نے کہا      سمج اس کہتیں بے خبر کیوں ہا  
 محمد کے نت نور میں ذات کوں،      کہ پاتا ہے اوصلوۃ بطول  
 وصل پاکے واصل چھپی بات کوں      سننے ہو رکھے بلکہ او ذات سموں  
 وصل پانچ واسوں جو باتاں سنے،      صلوۃ بطول سوں ادا ہوئے اونے  
 سچ لے خدا کا بھی ہے قول یوں      سخن رب سوں کرنا نماز بطول

These are all the various kinds of Khāki's poetry, and Maulānā 'Abdu'l Hai appears to have been wrongly informed when he says that Khāki had composed the lengthy 'mathnawī' "Faiz 'Ām" also.<sup>9</sup> I uselessly searched for it in the library of its supposed owner the late Maulavi 'Abdu'r Razzāque, the Chief Translator of the Nagpur High Court. But from his son Mr. Hamīdu'r Razzāque I could know that its copy is in the possession of his (latter's) uncle Mr. 'Abdu's-Sattar of Ellichpur (Berar). There I studied it and found that it was a 'mathnawī', composed by absolutely a different poet 'Abdu'l Muḥammad and that it gives a detailed account of the 'Mahdawī' propaganda and work done by some Mu'sṭafā<sup>10</sup> (bin 'Abdu'r-Rashīd)' whose grandfather Shaikh Waish (?) was a 'companion' of Sayyid Muḥammad 'Mahdi' of Jaunpur (d. 910/1505). This 'mathnawī' contains about 4,000 verses and begins with the praise of God thus:

<sup>9</sup> Gu'l-i-Ra'na, p. 11, footnote.

<sup>10</sup> Mr. Hamīdu'r Razzāque has got a MS., containing 90 letters by this Mu'sṭafā. In his 72nd letter these Urdu words are reported to have been uttered by the "Mahdi" of Jaunpur:—

ہم توں میانے خدا بہتر کے عجب ہے جو۔

خدا کی کروں صفت اول بیاں	بنایا بنے سب زمیں آسمان
بھی انسان کوں خاک سیٹی کیا	انا اللہ شرف اُس کوں یا
بنے جان کوں اگ سو کر بدن	پری جن کا تسنیں پنجہ رتن
ٹپا جن نے پیدا حیوانات کوں	نباتات کوں ہر جمادات کوں
جو کچھ دیکھتا ہیں ارض و سما	کو نہ ہا ر سب کا ہے بے شک خدا

After the 19 lines of 'ḥamd' begin the praises of the Holy Prophet, and the four Pious Caliphs, and then a short account of Sayyid Muḥammad 'Mahdī' and his five great companions Sayyid Maḥmūd, Sayyid Khunḍ<sup>11</sup> Mīr, Shāh Ni'mat, Shāh Nizām and Shāh Dīlāwar. Then begins the detailed account of Muṣṭafā, as taken by the author from a Persian work of some Shaikh Ādam. The opening lines are:—

اے سن بیاں اس قصے کا لے یا	اگر تو اچھے دل منے ہو شیار
میاں مصطفیٰ کا قصہ فارسی	بنایا تھا دل کھول جیوں آر سی
میاں شیخ آدم میں کر کر بیاں	سو بولے تھے اس کوں مبارک زباں
ولے اُن پڑھیا اس کوں کیا بوجھتا	کہ جیسے اندھے کوں نہیں سمجھتا
سہل کر کو دکنی میں جوڑی کتاب	بجھنے میں ہر اک کے آدے شتاب
کیا ہے یہ دکنی زباں سوں کلام	دکھانا تو اس کا یقین فیض عام

As it is beyond the scope of this essay to deal with this 'mathnawī' in detail, I would like to finish it by quoting here its ending lines which give the date of its composition:—

<sup>11</sup> The same gentleman has got a "mathnawī", by a poet Sharaf, on the "martyrdom" of this Khunḍ Mīr.

نہیں چاندِ شبنان کی رات کوں	خدا نے یو آخر کیا بات کوں
اتھا سن جبری جہاں یک ہزار	بھی یک سو پو چالیس یک در شمار
سو عبدالمحمد بنی کا غلام	خدا کے فضل سوں کیا یر تمام
اتپا چاہتا ہے یو عاجز غریب	کہ ہو عاقبت سیچ نیکی نصیب
کہ یعنی خدا آپ کر کر فضل	سوا یہاں بخشے عطا بے خلل
شرعیّت بنی کی اوپر مستقیم	رکھے آپ صاحب غفور الرحیم
پڑھے جیساں مصطفیٰ کا ذکر	بھی جو کہ عقیدہ منے کان دھر
تو اپنی زباں سوں خدا کے بدل	دعا سوں کرے یاد صاحب غفر
وگر جو خطا چوک دکھیں کبھی	تو کہ عیب پوشی سنواریں سبھی
بنی پر دروداں پڑھو بے شمار	بھی مہدی پہ بھیجو سلاماں ہزار

These lines clearly show that the accounts of Mu'sṭafā were completed by the poet 'Abdu'l-Muḥammad in the night preceding the 9th of Sha'bān, A.H. 1141 (=Wednesday night, the 27th of February, A.D. 1729). In the presence of this clear proof about its author we cannot even think for a moment that this mathnawī, as Maulānā 'Abdu'l Ḥai writes, had ever been written by Khākī, who was alive at least upto 1182/1768, i.e., more than forty years after the completion of "Faiz 'Ām" by 'Abdu'l-Muḥammad. Furthermore, had Khākī been a "Maḥḍavī," he would have written, like 'Abdu'l-Muḥammad, the praise of "Maḥḍī" also in his ḡīwān.

#### *Was Khākī a "Rekḥṭī"-writer ?*

There is much difference of opinions regarding the origin of Rekḥṭī. Some scholars like Dr. Zoar<sup>12</sup> and Mr. Ṭamkīn<sup>13</sup> take Hāshimī of Bijāpūr (d. 1697) to be the first Rekḥṭī-writer, but Maulānā 'Abdu's-Salām Naḍvī,<sup>14</sup> professor Mas'ūd Ḥasan Rizvī<sup>15</sup> and Mr. Mubīn Naqṣī<sup>16</sup> deny that fact, because, according to them, "Rekḥṭī" is that sort of poetry which is based upon the sentiments and ideas of women and is written in their peculiar colloquial language. Hence, they (the latter scholars) regard Rangīn

<sup>12</sup> *Urdu Shah-pārey*, Vol. I, pp. 259-60.

<sup>13</sup> *Tadhkira-i-Rekḥṭī*, Preface, p. 2.

<sup>14</sup> *Shi'ru'l-Hind*, Vol. II, p. 83.

<sup>15</sup> *Majālis-i-Rangīn*, Preface, p. 8.

<sup>16</sup> *Tārīkh-i-Rekḥṭī*, Preface, p. 3.

(d. 1835) to be its originator. Any way, we have to judge whether our Khākī was also a writer of "Rekhtī". Mr. Tamkīn has quoted one ode of such poetry by him, and it is thus:—

پایا بن لے پہلی انجوں سے نگہ دھوتی ہوں      کبھی میں منتغ گہرا اندھا رادیکھ روتی ہوں  
 کرو پیو پیرسین ظاہر یوسبل سات ہو کیاں      جنم سب بحر میں غم کے تیرے بن نت یوکھوتی ہوں  
 یو جاری عین ممکن ہو ملے جب دیکھ بالاسوں      بھیڑوں برہ کی تب میں نخل پرست سوتی ہوں  
 رہوں میں کب تنگ جھرتی جلا کر دل کتیں کڑتی      کہ اب غم کے پہاڑوں پر بھلا ہے سر بڑوتی ہوں  
 رہوں کیوں ابتدائیں میں سے جب تہا مجھ کوں      فنا فی الشیخ ہو کر میں بقا با اللہ ہوتی ہوں  
 سجن کا ورد کرنے کو محبت کے پورستہ میں      سدا میں من کے تنگیوں کوں پس پلکوں پڑتی ہوں  
 دھڑت عاشقی کوں میں فقر کے پھول پھل ہونے      نبت اٹھ کر دل میں میر اپنے اوچھ عشق بونی ہوں  
 کوں ممکن کہ ساتی میں کبھی سیر لیتی کا      چلوں جبٹا شاپو کے یوں اجب کون ہوتی ہوں  
 17 مردوں شاہزادہ کی ترقی پاک کے لے خاکی      شبی وحدت کے دریا میں مرے پن ڈوبتی ہوں

In my opinion, these lines fall short of the definition of Rekhtī, as given above, and were written merely after the Bhāshā poetry, which had influenced a great deal, the Urdu prose and poetry of the Deccan in that age. The presence of a few words of women cannot totally change the name and nature of this poetry whose whole structure is Bhāshā alone.

#### *Khākī's Mystical Ideas*

Like Rūmī (d. 1273) Khākī also speaks wholly of the Eternal Love and there are hardly a few lines in his dīwān which lack the spiritual tones. The popular mystical aphorism "The Phenomenal is the bridge to the Real" has been propounded by several mystic poets, as by Jāmī (d. 1492) also in his mathnawī "Yūsuf-o-Zulaikhā" :—

<sup>17</sup> Tadhkira-i-Rekhtī, p. 36.

دلے فارغ زور عشق دل نیست      تنے بے درد دل جز آبِ گل نیست<sup>18</sup>  
 متاب از عشق رو، گرچہ مجازی ست      کہ این بہر حقیقت کا رسانی ست  
 بلوح اول الف بآ تا نخوانی ،      ز فتنہ آں درس خواندن کے توانی

But Rūmī totally discards the worldly love and directly reaches the Real one by saying :—

عشقہاے کرپئے رنگے بود      عشق نبود عاقبت رنگے بود  
 عشق نبود آں کہ در مردم بود      این فساد از خوردن گندم بود  
 عشق بامردہ نباشد پا ثدار      عشق را برحق و برقیوم دار

Similarly, Khākī, though has a touch of the “Phenomenal”, yet discards even the worldly marriage, as he says in his mathnawī :—

جو کرتے ہیں عالم سوادِی نہیں      کہ احمق ہیں کرتے ہیں شادی یہیں  
 جسے اس حقیقت کا لذت گئے      مجازی طرف دل کبھی نہ جھٹکے  
 مجازی حقیقت سوں کر نہیں جُدا      نظریہ حقیقت پر کہ توں جدا  
 خودی چھوڑ کر پاخودی کوں جدا      خودی بن نہ ہوئے گا جاہل خدا

But Khākī's “Phenomenal” is not the worldly love of Jāmī but exactly Rūmī's “Fanā—Baqā<sup>19</sup>”, as we find in the following verses :—

نیں فنا کوئی شے، ہے مبین بقا      نفی کہتے سو ہے وہی اتبات  
 یوں سمجھ عارفان نے جز کل میں ،      ہو رہیں ہے سدا وہی یک دعات

<sup>18</sup> Like Jāmī, Dr. Sir Muḥammad Iqbāl has also a message for the ‘body’ and ‘heart’ in a very fine quatrain (*Payām-i-Mashriq*, p. 18):—

تنے پیدا کن از مشیتِ غبارے      تنے محکم تراز سنگینِ حصارے  
 وردن او دے درو آشنائے      چو جوئے در کنار کوہ سارے

<sup>19</sup> Rūmī has clearly said :—

گرچہ آں وصلت بقا اندر بقاست      یک در اول بقا اندر فناست  
 آئینہ ہستی پہ باشد نیستی      نیستی گزیریں گرا بلہ نیستی



Hence the religious tenets and dogmas have been described by him with allegory, whose goal, according to him, is gnosis alone. Some such verses of his mathnawī are as follow:—

سجھ لے خدا کا بھی ہے قول یوں	سخن رب سوں کرتا نمازِ بطوں
طلب جس کوں ہے حق کے دیدار کا	وہ ہے روزہ باطنی یار کا
ہے افطار، دیدار دیکھا ہے جن	ہنہیں کس کوں افطار دیدار بن
گواہی ہے اس پر حدیثِ نبیؐ،	اسی کا کہا ہوں بیاں میں سبھی
جو چوتھا فرض ہے زکوٰۃ بطوں	بیاں اس کا کرتا ہوں سنِ خوبِ ذوں
محمدؐ کے جن نورِ ہور ذات کوں	اگر باکے ظاہر کرنے سلقِ سوں
سجھ لے یو باطن کا ہے گا زکوٰۃ،	کیا ذکرِ تحقیق کریں یو باست
فرض پانچواں یار او بوج حج،	بیاں کھول کرتا ہوں اس کوں سحج،
اپن دل کوں پا، دل کا کرنا لطاف	وہی حج اکبر سے نہیں ہے خلاف
کہ اول جیسے نہیں ہے یو، دل نہیں،	نہ سمجھے توں یہ مضغہ گوشت کیس
کہیں ہیں نبیؐ قلبِ مومن دوام،	کہ بے شک ہے او کعبۃ اللہ مدام
شریعت کے لوگاں کوں دعوتِ کردں	کمزوری کوں حدت کے آگودھروں
اتائیں طریقت کی شادی گناؤں	حقیقت کے دولا دولن کوں ملاؤں

اوشاہ میں گنجِ مخفی میں جب	بچھونے کوں کرلاٹے، دلی کوں تب
کہ دولا بھی عاروس یک جاٹے	لگے وصل میں محو ہو جاٹے
مشاطہ کوں دولے نے اس وقت کھر	ملا جا کہ عاروس سوں ایکٹ ہر
جو کرتے ہیں عالم سوشادی نہیں	کہ احمق ہیں کرتے ہیں شادی نہیں

Khāki again seems to follow Rūmī in assigning the highest place to his spiritual leader. Rūmī calls Shams of Tabriz as follows:—

شمس و خواجه اگرچہ بہت فرد      مثل او ہم می توان تصویر کرد  
 ایک آں شمس کے شد متناثر شبہ      بنو و شس در ذہن و در خارج نظیر  
 در تصور ذات اور انکج کو      تا در آید در تصور مثل او  
 شمس تبریزی کہ نور مطلق ست      آفتابیت و زانوار حق ست

And also at one place:—

دستِ پیر از غائبان کوتاہ نیست      دستِ او جسے قبضۃ اللہ نیست

Similarly, *Khāki* addresses his spiritual head thus:—

مرشد جمال اللہ ہے خاکی وہی اللہ ہے      کل شیئی لوجہ اللہ جا ویکہ و قرآن مجید  
 عین اللہ جمال لے خاکی      جس سوں پایا نشان ہے ہو حق  
 عین اللہ ہے جمال اللہ      خاکی اس کے قدم پہ جا بل بل  
 جمال اللہ کوں کل میں دیکھ رہا      کفایت ہے کفایت ہے کفایت

But just as *Rūmī* wants the spiritual leader to be the follower of “*Shari‘at*”:—

رہبر راہ طریقت آں بود      کو بہ احکام شریعت می رود  
 گر نباشد در عمل ثابت قدم      چوں رہا نہ خلیق را از دست غم

so also *Khāki* has the following stages for reaching the Real:—

پیو کا توں مقام پاوے تب      جب کرے توں عروج نہ درجات  
 اولاً پاک ہو شریعت سوں،      نفس کے دور کر توں سب خطرات  
 تب طریقت میں رکھ قدم اپنا      لے حقیقت کا دیکھ کر لذات  
 خاکی دریا کوں معرفت کے پیر      برج عرفان میں تو بلے شک ذات

## A NOTE ON THE DATE OF HEMADRI'S DEATH

BY PROF. V. B. KOLTE, M.A., LL.B.

(Amraoti)

NOTHING definite is known so far about the death of Hemādri—"the celebrated author of works on Dharmashāstra, who flourished during the reigns of Mahādeo (1260-70 A.D.) and Rāmchandrārāo Yādava of Deogiri (1271-1309 A.D.) and was minister to both."<sup>1</sup> At least the current history has no record of it. The only source from which we get any authentic information about Hemādri's life is the *Early History of the Deccan* by Sir R. G. Bhāndārker. Recently Mr. K. A. Pādhye of Bombay has written a voluminous book<sup>2</sup> on the life of Hemādri. But both the works say nothing about the death of Hemādri.

However, certain Mahānubhāva literary works throw a flood of light on the character of this renowned Sanskrit scholar and patron of the followers of Shankarāchārya. They speak of his religious intolerance which ultimately led to his very tragic death. The account appears in many recensions of *Līlā-charitra* or the life of Shri-Chakradhara—the founder and leader of the Mahānubhāva sect. *Līlā-charitra* is a prose work in Marāṭhi and was originally written sometime after 1276 A.D. and before 1286 A.D. It may be said to be the oldest Marāṭhi prose work so far discovered. Unfortunately the whole of it has not yet been published. But various old MSS. of this important and valuable work have been well preserved in the temples of Mahānubhāvas. In one of the recensions of this work known as Jākhobā-recension,<sup>3</sup> I have come across the following tragic account of Hemādri's death which throws light on his date also.

In the reign of Yādavas, a saint Chakradhara by name (original name Harapāldeo), born in Gujrat at Baroch, migrated to Mahārāshtra. He founded a religious sect then known as Par-mārga<sup>4</sup> or Bhat-mārga and afterwards as Mahānubhāva or Mānbhāva. He preached dualism and called himself as the incarnation of God. This attracted a host of learned

<sup>1</sup> *Early History of the Deccan*, p. 162.

<sup>2</sup> The book is in Marāṭhi. Its title is हेमाद्रि ऊर्फ हेमाडपंत यांचें चरित्र.

<sup>3</sup> I had secured this manuscript from Yakshadeo Mahanta of Ritpur (Amraoti District). It is still with him.

<sup>4</sup> लोकशिक्षण, ऑक्टोबर व नोव्हेंबर १९३६. महानुभाव पन्थ की परमार्ग ?

pupils around him. The number of Chakradhar's disciples gradually swelled enormously, some of whom were officials at the court of Rāmdeorāo Yādava. Naturally, the Vedānta-mārga of Shankarāchārya fell in the estimation of the common people. This rise of Chakradhara and his sect which preached dualism in contravention to the then existing Advaita Vedānta-mārga of which Hemādri was so proud could not be overlooked by the latter. Brahmasānu, the priest of Yādavas and Mahadāshram, the priest of Hemādri, both of whom were the chief leaders of the Vedānta-mārga intrigued to poison Chakradhara and bury him alive. But their intrigues were frustrated. Ultimately Mahadāshram advised his disciple Hemādri to kill Chakradhara by whatever means possible and get rid of him to save the Vedānta-mārga which, he thought, was being downtrodden by Chakradhara.

Accordingly Hemādri sent some soldiers against Chakradhara who was then staying at Vriddhā Sangam. Here, the account says, all the soldiers sent by Hemādri were defeated by Chakradhara and his disciple Nāgdeo because of their superhuman powers. On learning this, it is said that Hemādri repented for his behaviour and sent his son to bring Chakradhara who was then at Belāpur (Nagar District) to Deogiri. Chakradhara, in the beginning, refused to go with him but after an earnest request from one of his own disciples he agreed. On his way to Deogiri, the account tells us, one morning when they were resting at Khokargaon, a supernatural phenomenon occurred. All of a sudden there was thundering and lightning and with a flash of lightning Chakradhara disappeared.

This account is elucidated in certain other recensions of *Līlā-charitra* which clearly say that Chakradhara was assassinated at Khokargaon under the orders from Hemādri. Some recensions of *Līlā-charitra* speak nothing about this incident, only because of the religious belief which does not allow to describe the death of their revered saint. However, some MSS. do mention very clearly the murder of Chakradhara but add that afterwards Chakradhara again became alive and went northwards, leaving Mahārāshtra for good. I have come across the same account of Chakradhar's murder in another manuscript also, called *Belāpur-charitra*.

This murder of a great religious saint or as the Mahānubhāvas call him —the incarnation of God, brought all sorts of miseries on Mahārāshtra and especially the Yādavas in whose territories this treacherous deed was accomplished. Afterwards when Rāmdeorāo came to know about the murder committed by Hemādri, he ordered that Hemādri's property be confiscated, his house be razed to the ground and that he himself be put to

death immediately. The way in which Hemādri was put to death is very tragic. He was sent to prison where he was inhumanly flayed alive and was starved to death.

This account is indirectly corroborated by the evidence in the chronicles of Mahikāvati.<sup>5</sup> On page 81 of these chronicles, verses 54 and 55 say that when Rāmchandra (*i.e.*, Rāmdeorāo Yādava) was ruling, an ominous deed was perpetrated by putting a Brahmin to death which ultimately led to the downfall of the sons of the king. Though there is no direct mention of Hemādri's name yet, from whatever account we learn in Mahānubhāva works, it can be said that the Brahmin whose death is referred to here may be Hemādri.

From this account we may infer that Hemādri was put to death by Rāmdeorāo Yādava and that this occurred after the murder of Chakradhara. The date of Chakradhara's<sup>6</sup> murder is 1198 Saka, *i.e.*, 1276 A.D., which shows that Hemādri's murder took place sometime after 1276 A.D. and could not be much after that.

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<sup>5</sup> महिकावतीची वखर. संपादक: राजवाडे.

<sup>6</sup> भास्करभट्ट बोरीकर, पृष्ठे ७४ ते ७५.

## A NEW INTERPRETATION OF A DISPUTED REFERENCE IN GARGA SAMHITĀ

BY LT.-COL. T. J. KEDAR, B.A., LL.B.

THE scholars are divided in opinion on the interpretation of a reference in the *Garga Samhitā* to the interval of time that elapsed between the rule of Yudhiṣṭhir and the beginning of Śāka era. The reference is contained in the following couplet:

आसम्मघासु मुनयः शासति पृथिवी युधिष्ठिरे नृपतौ ।  
षड्विकपंचद्वियुतः शककालस्तस्य राज्यस्य ॥<sup>1</sup>

The plain meaning of this couplet is as follows:

“The Saptarṣhis were in the constellation of Maghā while Yudhiṣṭhir was ruling. Between his rule and the Śāka era—years elapsed.”

The difficulty is about the filling up of the number left blank in the translation. The orthodox scholars, including Kalhaṇa, the author of *Rājatarangīnī*, read the expression “षड्विकपंचद्वि” in the usual reverse order as meaning 2526 and so they take the interval to be of 2526 years.

Mr. Gopala Aiyar, another scholar, thinks that the expression शककाल (Śāka era) must be a mistake for शाक्यकाल (Śākya era).<sup>2</sup> But the stanza which is found in the *Rājatarangīnī* of Kalhaṇa is also found in the same form in the *Bṛihat Samhitā* of Varāhamihira.<sup>3</sup> Mr. Gopal Aiyar further interprets the expression षड्विकपंचद्वि as meaning  $25 \times 26 = 650$  years. He takes the orthodox method of reading the years in the reverse order in two instalments and then multiplies the one result by the other. The obvious idea is to establish that if Yudhiṣṭhira lived 650 years before the time of Śākyamuni or Gautama Buddha whose death, following certain western scholars, he assigns to 543 B.C., he lived about  $650 + 543$  or 1193 B.C. This method of interpreting the stanza is obviously wrong, and there is also the difficulty of accepting the Śāka era as equal to the Buddha era.

Dr. Daftari, a third scholar, says “षड्विक” really means “two sixes”. But Kalhaṇa, the author of *Rājatarangīnī*, has taken it to mean, 26, i.e.,

<sup>1</sup> Quoted by Kalhaṇa, *Rājatarangīnī*, ch. I, verse 56.

<sup>2</sup> Narayan Shastri, *Age of Shankar*, Part I, ch. 2.

<sup>3</sup> 13, v. 3.

he takes द्विक as equivalent to द्वि while grammatically it really means a group of two things. Here, therefore षड्विक really means a group of 2 sixes, i.e., 66, etc."<sup>4</sup> Not being content with his effort in deducing any sensible meaning from his interpretation, Dr. Daftari says that the reference in the *Garga Samhitā* is an inferential statement and has no value as it conflicts with the deductions from astronomical statements and, therefore, as it stands, it must have been based upon some wrong inference. His conclusion is that the reference is valueless as a land-mark in determining the interval.<sup>5</sup>

I think, with due respect to the three views, the interpretations placed are all wrong. There is the obvious mistake in the orthodox view that द्विक is confounded with द्वि. "षड्विकपंचद्वि" cannot be read in the reverse order so long as द्विक stands there as a stumbling-block. If द्वि had existed in the line instead of द्विक, the interpretation was possible. But the existence of द्विक presents an insuperable difficulty. द्विक does mean 'double or twice' or in other words षड्विक means twice six or 12. Dr. Daftari was quite near the mark when he said that द्विक meant a group of two things but he did not draw the obvious conclusion from this literal meaning. Instead of 66, he should have taken  $6 \times 2 = 12$ ; so that we are required to add 'पंचद्वि' after 12. The result is that the expression "षड्विकपंचद्वि" literally means 1252.

The late R. B. C. V. Vaidya observes, "We think the compound means 2566 and not 2526, the component word द्विक meaning twice and not two, the whole word being interpreted according to grammatical rules."<sup>6</sup> It will be easily realised that the learned author has also narrowly missed the mark. He correctly interprets षड्विक as meaning twice six but has failed to draw the correct result, viz., 12. He further failed to see that when the usual method of reading the figures in the reverse order was interrupted by the introduction of a word like द्विक, the method could not fairly be resorted to and the only reasonable inference is that the whole expression means 1252 and nothing else.

Mr. Narayan Shastri, another orthodox scholar, admits that the expression "षड्विकपंचद्वियुत"<sup>7</sup> may mean "6 + 2 + 5 + 2 or perhaps  $6 \times 2 \times 5 \times 2$ ."

<sup>4</sup> "The Astronomical method and its application to the Chronology of Ancient India," *agpur University Kinkhede Lectures*, p. 97.

<sup>5</sup> *Ibid.*, p. 97 ff.

<sup>6</sup> *Mahābhārata—A Criticism*, p. 68 (2nd ed.).

<sup>7</sup> *Age of Shankar*, Part I, ch. 2.

According to my interpretation, it should mean  $12 + 5 + 2$ , the first figure being a result of  $6 \times 2$ . If then the disputed expression means an interval of 1252 years, it accords with the results of Dr. Daftari which he has arrived at from his astronomical calculations.<sup>8</sup>

If the date of the Mahābhārata war is 1197 B.C. according to Dr. Daftari, the interval of 1252 years between the rule of Yudhiṣṭhir and the Śaka Kāla is approximately true. The Śaka Kāla will be the Śaka year of 78 A.D. and if we count 1252 years backwards, we come to the year 1174 B.C.

According to Dr. Daftari, the date of the Pāṇdavas has been proved by indisputable astronomical evidence to be 1251 B.C. to 1175 B.C. In another connection Dr. Daftari mentions 1175 B.C. as the date of the death of Arjun. It is, therefore, reasonable to suppose that the interval of 1252 years may have been taken between what was the end of the rule of Yudhiṣṭhir and the beginning of the Śaka era and not between the beginning of the rule and the beginning of the Śaka era. The expression 'शासति' rules out the time of the beginning of the rule of Yudhiṣṭhir.

The date of Garga has not yet been definitely fixed. Kalhaṇa flourished in the 11th century A.D. Varāhamihira is believed to have lived about 490 A.D. R. B. Vaidya assigns 153 B.C. to Garga. But he observes that Garga is generally believed to have lived before the Christian era.<sup>9</sup> On the other hand, Aryabhatta, who unquestionably lived before Garga is believed to have been born in 398 of the Śaka era.<sup>10</sup> The supposed difficulty in taking Śaka Kāla to be the era dating from 78 A.D. does not thus exist.

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<sup>8</sup> *Opus cited.*

<sup>9</sup> *Mahābhārata*, p. 68.

<sup>10</sup> Ketkar, *Dnyankosha*.



## KHĀRAVELA AND GARDABHILA

BY PROF. H. C. SETH, M.A., PH.D. (LONDON)

### *Date of Khāravēla*

IN the first attempts to decipher Hāthigumphā inscription of Khāravēla, found in the Udayagiri hills in Orissa, it was assumed that this record was dated in the 165th year of Maurya era. Bhagvanlal Indraji interpreted a sentence in it to mean that the thirteenth year of Khāravēla's reign corresponded to the year 165 current and 164 expired of the time of the Maurya kings. He was also inclined to believe that this era began with the eighth year of Aśoka, the year in which he conquered Kalinga, and taking 263 B.C. as the year of Aśoka's accession, he placed the accession of Khāravēla in 103 B.C.<sup>1</sup> Bühler accepted Bhagvanlal Indraji's reading of the sentence, but pushed back the initial year of the Maurya era to the year of Candragupta's accession, and assigned Khāravēla's inscription to the middle of the second century B.C.<sup>2</sup>

Fleet questioned the reading of Bhagvanlal Indraji of a Maurya era in the inscription of Khāravēla.<sup>3</sup> Lüders also following Fleet did not find any mention of a Maurya era in the inscription.<sup>4</sup> To begin with Jayaswal revived the theory of Maurya era, and assigned it to the beginning of Candragupta's reign.<sup>5</sup> But subsequently on a more careful reading and editing of the inscription Jayaswal also abandoned the view that the inscription was dated in the Maurya era.<sup>6</sup> The view is now generally held that Khāravēla's inscription does refer to a Maurya king, but the record is not dated in a Maurya era. Thus, this reference to the Maurya king in the inscription does not help us to fix the date of Khāravēla.

The inscription also refers twice to a Nanda king (of Magadha). The first reference to Nanda king is now generally understood to mean that the Nanda king constructed a canal 300 years before, which was extended by Khāravēla to his capital in the fifth year of his reign. According to the second reference, the Nanda king had taken away the statue of the

<sup>1</sup> *Actes du Sixième Congrès des Orient*, III, p. 146.

<sup>2</sup> *Indian Palæography*, Table II.

<sup>3</sup> *J.R.A.S.*, 1910, p. 242.

<sup>4</sup> *Ep. Ind.*, Vol. X, App., Inscript. No. 1345.

<sup>5</sup> *J.B.O.R.S.*, 1917, Vol. 3, p. 425 ff.

<sup>6</sup> *Ibid.*, 1927, Vol. 13, p. 221 ff.

First Jina, which Khāravēla brought back in the 12th year of his reign along with other precious booty from Magadha. The reference to the Nanda king in the inscription may help us to fix the date of Khāravēla, as it seems probable that the Nanda king referred to in the inscription is Mahāpadma Nanda. The Purāṇas state that Mahāpadma Nanda exterminated all Kshatriyas and that until then there reigned contemporaneously 24 Aikshvākus, 27 Pāñchālas, 24 Kāśis, 28 Haihaya, 32 Kālīngas, 25 Āśmakas, 36 Kurus, 28 Maithilas, 23 Surasenas and 20 Vītihoṭras.<sup>7</sup> Thus, according to the Paurāṇic traditions Mahāpadma Nanda seems to have conquered Kālīṅga. If we place Candragupta's accession in 325 B.C.<sup>8</sup> and following the Purāṇas assign 100 years to Mahāpadma and his sons,<sup>9</sup> then the period of these Nandas will fall between 425 and 325 B.C. Supposing that the canal in Kālīṅga was constructed in the middle of this period in the reign of Mahāpadma, it will give the date of the construction of this canal about 375 B.C. The fifth year of Khāravēla's reign falls 300 years after this, i.e., about 75 B.C.

A careful examination of the facts known about the history of the country during the second and first century B.C. would also suggest that Khāravēla belongs to a period of the decline of the Śuṅgas. During the hey-day of the Śuṅga dynasty, particularly during the reign of its founder Pushyamitra, there appears to be no place for a conqueror like Khāravēla. Jayaswal's identification of the Magadha king Bahasatimita mentioned in the twelfth line of Khāravēla's inscription, whom Khāravēla makes to bow at his feet, with Pushyamitra, the founder of the Śuṅga dynasty, on the ground that Brīhaspati is the deity of the Pushya Nakshatra and both are according to Sanskrit usage identical<sup>10</sup> is not convincing. It is more likely that the Rājan Bahasatimita of Khāravēla's inscription is the Rājan Bahasatimitra of the Pabhosā inscription,<sup>11</sup> and of the coins. The Pabhosā inscription mentioning Bahasatimita seems to be dated in the tenth year of Odraka who, according to the Purāṇas, is the fifth king of the Śuṅga dynasty. Bahasatimita seems to be associated with Magadha,<sup>12</sup> and he

<sup>7</sup> Pargiter, *Dynasties of the Kāli Age*, p. 69.

<sup>8</sup> We have elsewhere argued for 325 B.C. as the date of Candragupta Maurya's accession, *J.I.H.*, Vol. XIX, p. 17 ff., and *Indian Culture*, January 1939, p. 305 ff.

<sup>9</sup> The Purāṇas assign 88 years to Mahāpadma Nanda and 12 years to his sons.—Pargiter, *Dynasties of the Kāli Age*, p. 69.

<sup>10</sup> *J.B.O.R.S.*, Vol. 3, p. 478 : Jayaswal reading in the inscription of the retreat of the Greek prince Demetrius against Khāravēla is too conjectural to give any basis for determining the date of Khāravēla.

<sup>11</sup> Lüders, "List of Brāhmi Inscriptions, No. 904" (*Ep. Ind.*, Vol. X, App.).

<sup>12</sup> Raychaudhri, *Political History of India*, p. 335 (4th Ed.).

may have occupied the Magadha throne sometime after Odraka, which would place him in the first century B.C.

Reference to Śātakarṇi in Khāravela's inscription also indicates that Khāravela belonged to the first century B.C. It is generally surmised that Śātakarṇi of Khāravela's inscription is Śātakarṇi I, the third Āndhra king. According to the Purāṇas, Simukh, the founder of the Āndhra dynasty, rose to power by destroying the Śuṅgas and the Kāṇvas. The Purāṇas assign 137 years to the Mauryas, 112 years to the Śuṅgas, and 45 to the Kāṇvas. Śuṅgas and Kāṇvas appear to have ruled contemporaneously. As pointed out by R. G. Bhandarkar, according to the *Vāyu* and *Mātsya Purāṇas*, the founder of the Āndhra dynasty "is said to have uprooted not only the Kāṇvas, but whatever was left of the power of Śuṅgas."<sup>13</sup> And the Kāṇvas are pointedly spoken of as Śuṅgabhr̥tyas or 'servants of the Śuṅgas'.<sup>14</sup> It, therefore, appears likely that when the princes of the Śuṅga family became weak, the Kāṇvas usurped the whole power, and ruled like the Peshwas in modern times, not uprooting the dynasty of their masters, but reducing them to the character of nominal sovereigns. Thus, then, these dynasties reigned contemporaneously, and hence the 112 years that tradition assigns to the Śuṅgas include the 45 assigned to the Kāṇvas."<sup>15</sup> Or may be that Kāṇvas supplanted Śuṅgas in certain parts of the country and subsequently Āndhras supplanted both the Kāṇvas and the remaining Śuṅgas.<sup>16</sup> Assuming 325 B.C. as the starting point of the Maurya dynasty and allowing 137 years to the Mauryas and 112 years to the Śuṅgas and Kāṇvas, we shall

<sup>13</sup> काण्वायनस्त (नं त) तो मृत्यः सुशर्मणं प्रसह्यं तम् । शुभ्रानं चैव यच्छेषं क्षययित्वा बलं तदा ॥  
सिन्धुको खान्धजातीयः प्राप्स्यतीमां वसुंधराम् (Vāyu.)

<sup>14</sup> चत्वारः शुङ्गभृत्यास्तै नृपः काण्वायना द्विजाः (Vāyu.)

<sup>15</sup> R. G. Bhandarkar, *Collected Works*, Vol. III, p. 43.

Compare the following remark of the *Cambridge Indian History* :—

"Certain incidental statements (in the Purāṇas) seem to show that the Kāṇvas and Śuṅgas were contemporary. The Kāṇvas, who are expressly called 'ministers of the Śuṅgas', are in some versions, said to have become kings 'among the Śuṅgas'; and, as has been observed already, the Āndhras are credited with sweeping away not only the Kāṇvas, but also what was left of the Śuṅgas' power," Vol. I, p. 522.

<sup>16</sup> According to a story given in Somadeva's *Kathāsaritsāgar*, Suśarman is the king of Pratisthāna. His daughter Śrī falls in love with Devadatta, son of a Brahmin. Mahidhara, son of Śrī and Devadatta, became king after Suśarman (Penzer, *Ocean of Stories*, Vol. I, Ch. VII). This story may refer to the rise of the Āndhras, who also claim themselves to be of the Brahmin origin. According to the Purāṇas, Suśarman was the last Kāṇva king, after whom they place Simukh, the founder of the Āndhra dynasty, who not only destroyed the powers of the Kāṇvas but also of the Śuṅgas. It may be that Kāṇvas succeeded Śuṅgas in Pratisthāna. The Āndhras supplanted the Kāṇvas in Pratisthāna and the Śuṅgas in the Central India. As is summarised in the *Cambridge History of India* (Vol. I, p. 318), the Āndhras had probably no connection with Magadha.

get the rise of the Āndhras in the first quarter of the first century B.C., and the third Āndhra king Śātakarṇi and his contemporary Khāravēla would belong to about the middle of this century.

On palæographic grounds also the opinion seems now to be inclined to put Khāravēla's inscription in the first century B.C. Bühler placed the inscription of Khāravēla about 160 B.C. But as R. Chanda observes, "when he (Bühler) wrote his work, no Brāhmi inscription was known that could be approximately dated either in the second or in the first century B.C. on grounds other than palæographical. But in the inscriptions on two Garuda pillars of Besnagar we have epigraphs that may be approximately dated within the second century B.C. with some degree of certainty. The first of these pillars is the one bearing the now famous inscription of Heliodoros, Ambassador of Antialkidas, which may be assigned to about the middle of the second century B.C. with some degree of certainty. The second pillar bears a votive inscription of the thirteenth year after the installation of Mahārāja Bhāgavata. Professor D. R. Bhandarkar rightly identifies this Mahārāja Bhāgavata with Bhāgavata, the ninth king of the Śuṅga dynasty, who is said to have reigned for thirty-two years. So the epigraph may reasonably be assigned to the last decade of the second century B.C. The dates of the early Brāhmi inscriptions, like the Nānāghat cave inscription evidently belonging to the time of the third Āndhra king Śātakarṇi I, and the Hāthigumphā inscription of Khāravēla may now be settled, therefore, even on palæographical grounds, with a considerable degree of certainty in the light of the alphabet used in the inscriptions on the two Garuda pillars of Besnagar." And R. Chanda assigns "the Hāthigumphā inscription to about the middle of the first half of the first century B.C."<sup>17</sup>

#### *Identification of Khāravēla and Gardabhila*

In the light of the conclusion set forth above that Khāravēla belongs to the early part of the first century B.C., question may be raised if Khāravēla of the Hāthigumphā inscription is Gardabhila of the Jain and the Paurāṇic traditions. The following points suggest this identification:—

(1) The name Gardabhila may be reminiscent of Khāravēla. One of the versions of the *Kālakācārya Kathā* directly suggests that Gardabhila was the nick name of the king.<sup>18</sup> Jayaswal had shrewdly observed, "As to the name Gardabhila we may take the Purāṇic readings Gardhabhila

<sup>17</sup> J.R.A.S., 1919, pp. 396-97. See also his view on the subject in the *Memoirs of the Archaeological Survey of India*, No. 1, p. 7 ff.

<sup>18</sup> W. N. Brown, *The Story of Kālaka*, p. 106. This and some other versions of the Kālaka story give Darpaṇa as another name of Gardabhila.

and Gardabhin and the Jain Gaddabhilla or Gaddabhila and Rāsabha as sanskritization of Khara (ass) in Khāra-vela, and 'vela' was probably turned into 'bhilla' or 'bhila' alternatively, which finds echo in Soma-deva's story of the marriage of Vikramāditya with the daughter of Bhila sovereign of Kalinga. Compare the Orissa stories making Kharabhila I and Kharabhila II, the last of the seven Bhila Vamśa kings of Orissa, beginning with Airabhila.<sup>19</sup> The Jinas gave the derivation from 'ass' as the story of she-ass of Gaddabhila at Ujjayini is given in *Kālakācārya Kathānaka*, and Jinasena in 783 A.D. translated it by Rāsabha-rājanah, 'ass Kings', to whom he assigned 100 years. Khara was equated with Garddabhha, Garddhbhin and Gardddhabhi-la (Prākṛit: born of a she-ass). I think, the forms Gardhabha-bhila, Gaddabhila, Gardhabhin, are contemporary, popular, probably caricatured, forms of unfamiliar Khāra-vela, in Western India. The name could be easily caricatured. . . . The process of translation is evident throughout, e.g., Jinasena Rāsabha-rājanah, 'the assine Kings'.<sup>20</sup> Jayaswal did not realise the full implication of this suggestion, perhaps, because of his pre-occupation with the idea that Khāravēla of the Hāthigumphā inscription belonged to the second century B.C. If, as suggested above, Khāravēla is a figure of the first century B.C. he may be the founder of the Gardabhila dynasty of the Purāṇas. He and the dynasty founded by him, were, perhaps, first nick-named as Gardabhillas in the Purāṇas because of their patronisation of Jainism, as is fully evidenced in the Hāthigumphā and the Manchpuri cave inscriptions. The later-day Jain traditions also re-echoed the same nick-name.

(2) From the Jain sources we gather that Gardhabhila flourished in the first half of the first century B.C. According to the *Kālakācārya Kathā*, which is generally believed to have a nucleus of historical truth, Gardabhila was overthrown by the Śakas, whom Kālaka brought to Saurashṭra and thence to Ujjain from the western bank of the Indus. According to the Jain traditions, before the commencement of the Vikrama era which synchronises with 58 B.C., we have 4 years assigned to the Śakas and before the Śakas 13 years to Gardabhila.<sup>21</sup> This will place Gardhabhila's reign from 75 to 62 B.C., almost the same period which could be assigned to Khāravēla of the Hāthigumphā inscription.

(3) It seems that Gardabhila snatched Mālwa from the Śuṅgas, and also stemmed in that region the rising tide of the Āndhras, whose influence

<sup>19</sup> *J.B.O.R.S.*, Vol. 16, p. 191.

<sup>20</sup> *Ibid.*, Vol. 16, pp. 306-307.

<sup>21</sup> *Merutunga's Vicārāreni*.

had reached Central India, as indicated by the Sānchī inscription of Krishṇa and Śātakarṇi, second and third kings respectively of this dynasty. Khāravēla's inscription also informs us of his western conquests in disregard of Śātakarṇi. His arms reached westwards as far as the land of the Bhojakās and the Rāshṭrikās. It is probable that his conquest also covered the region of Mālṡā, and he must have destroyed the influence of the Āndhra king Śātakarṇi from this region also.

(4) We may also compare the 13 years assigned to Gardabhila in the Jain traditions to the account of the activities of the thirteen years of Khāravēla's reign given in the Hāthigumphā inscription. What actually happened to Khāravēla in the fourteenth year, his inscription does not help us to make out. But one thing is clear that his career of conquest suddenly came to an end with the thirteenth year of his reign. If he lived beyond that he must have led exclusively a religious life. If the surmise that Khāravēla is identical with Gardabhila is correct then likely his defeat at the hands of the Śakas in Mālṡā, as is suggested by *Kālakācārya Kathā*, brought his victorious career to an end.

(5) The Purāṇas suggest that there were seven kings in the Gardabhila dynasty.<sup>22</sup> With this we may compare the seven kings mentioned in certain manuscript, found in Orissa, as belonging to the dynasty to which Kharabhila (Khāravēla) belonged.<sup>23</sup>

(6) Both the Gardabhila dynasty and the dynasty founded by Khāravēla appear to be great patronisers of Jainism. The inscriptions of Khāravēla, of his queen, and of Vakradeva, who is perhaps Khāravēla's successor, found in Udayagiri hill caves bear testimony to their intimate association with Jainism. The story of Kālaka brings Gardabhila in close connection with the Jain community and his son Vikramāditya is made out in the Jain traditions as an ardent follower and patroniser of Jainism.

(7) Another important fact may be mentioned which may throw light on the identification of Gardabhila with Khāravēla. According to the *Kālakācārya Kathā* Gardabhila abducted and brought into his harem Kālaka's sister, which enraged the latter and made him seek the help of the Śakas to destroy the powerful Gardabhila. Kālaka, according to the traditions preserved in the various versions of the *Kālakācārya Kathā*, was the son of Vajrasimha<sup>24</sup> (Prākṛit: Vairsimha), king of Dhār (in Mālṡā). In one of the versions of the *Kālakācārya Kathā* this Vajrasimha, king of

<sup>22</sup> Pargiter, *Dynasties of the Kālt Age*, p. 72.

<sup>23</sup> J.B.O.R.S., Vol. 16, 1930, p. 191.

<sup>24</sup> Brown, *The Story of Kālaka*, p. 98, and p. 52, Note 2.

Dhār, is mentioned as hailing from Magadha.<sup>25</sup> This may indicate that Vajrasimha perhaps belonged to one of the branches of the Śuṅga dynasty of Magadha. It may be surmised that Vajrasimha may be Vajramitra mentioned in the Purāṇas as the eighth king of the Śuṅga dynasty.

We gather from Khāravēla's inscription that one of his queens was of the Vajra family.<sup>26</sup> The part of the inscription mentioning this queen has become obscure. It is difficult to say whether it means that in the seventh year of his reign Khāravēla married this lady or that she gave birth to a son. In the light of our suggestion that Gardabhila and Khāravēla are identical, it may be surmised that Khāravēla's queen of the Vajra family may be the sister of Kālaka and the daughter of Vajrasimha, king of Dhār. This will then suggest that Kālaka was not only annoyed with Gardabhila, because he abducted his sister, but perhaps he also snatched the kingdom of Dhār or eastern Mālwa from his family.<sup>27</sup>

#### *Historicity of Vikramāditya*

The identification of Khāravēla and Gardabhila may give a new interest to the question of the historicity of Vikramāditya who, according to persistent Indian traditions, destroyed the Śakas and thereby earned the title of Śākāri, and who also started the Vikrama (or Mālawa) era, reckoned from 58-57 B.C. *Kālakācārya Kathā* informs us that the Śakas, who defeated Gardabhila, themselves after some time were defeated and driven out of Ujjain by Vikramāditya, who established his own era. According to other Jain traditions Vikramāditya was the son of Gardabhila, and four years after Gardabhila's defeat, he drove the Śakas out of Ujjain.<sup>28</sup> According to the recokning common amongst the Jains it happened in 58-57 B.C. the initial date of the Vikrama era. That certain Vikramāditya well-known for his liberality did flourish about this period is attested by the reference to him in the Prākṛit work *Gāthā Saptasatī*<sup>29</sup> attributed to the Śātavāhan king Hāla, who belonged to the first or second century A.D.

In the Udayagiri hill, which contains the Hāthigumphā inscription of Khāravēla, we have also in the Manchapuri cave an inscription of Khāravēla's queen and another of Vakadepasiri (Sri Vakradeva), who like Sri Khāravēla

<sup>25</sup> Brown, *The Story Kālaka*, pp. 71 and 78.

<sup>26</sup> *J.B.O.R.S.*, Vol. 13, p. 227.

<sup>27</sup> Some of the stories in popular tradition connected with Vikramāditya and his father Gardhabasen make out the latter as the king of Dhārānagar.—Penzer, *Ocean of Stories*, Vol. VI.

<sup>28</sup> Merutunga's *Vicāraṅgī*.

<sup>29</sup> Ch. V, Verse 64.

styles himself Aira Mahārāja Mahāmeghvāhan lord of Kālīṅga.<sup>30</sup> It is generally surmised that Vakadeva or Vakradeva is the son and successor of Khāravēla.<sup>31</sup> In the light of our conclusion that Khāravēla and Gardabhila are identical, identification of Vakradeva (Vikramadeva ?)<sup>32</sup> with Vikramāditya may be hinted at. The *Yuga-purāṇa* appended to *Garga-Saṃhitā* suggests a conflict between the king of Kālīṅga and Śat (Śātavāhan ?) on the one hand and the Śakas on the other, in which the Śakas were completely destroyed.<sup>33</sup> The reference to Sipra in the same text would also suggest that this took place round Ujjain. This reference in the *Yuga-purāṇa* may be to the events which led to the destruction of the Śakas in 58 B.C. It may then seem likely that Vikramāditya, son of Gardabhila who, according to our conclusion, is the same as Khāravēla, started for the reconquest of Mālwa from Kālīṅga, and in alliance with the Śātavāhanas, as is also implied in the popular traditions,<sup>34</sup> drove the Śakas out of Ujjain, and established his own rule there. In commemoration of this victory over the Śakas, was, perhaps started the Mālwa era commonly associated in the Indian traditions with Vikramāditya. Under Vikramāditya the seat of the Gardabhila or Khāravēla dynasty may have been removed from Kālīṅga to Ujjain, which the political events connected with the period had made so important.

<sup>30</sup> Lüders, "List of Brāhmi Inscriptions, No. 1347," *Ep. Ind.*, Vol. X, App.

<sup>31</sup> *Cam. Hist. of India*, Vol. I, pp. 602 and 639.

<sup>32</sup> The inscription of Vakradepasiri has become so obscure at the place where the name occurs that it has become difficult to make out exactly what the original reading may have been. Vikramadeva may have been the original form, of which the worn-out form now remains as Vakadeva or Vakradeva. R. D. Banerji was inclined to read Kudepasiri in place of Vakradepasiri (*Ep. Ind.*, Vol. 13, p. 161).

<sup>33</sup>

शकानां ततो राजा शर्षकुब्धो महाबलः ।

दुष्टभावं पापं विनाशं समुपस्थितः ।

कलि-शत-राजार्थं विनाशं वै गमिष्यति ।

केचनकण्डेः शकैर्विजृम्भन्तो गमिष्यति ।

कनिष्ठास्तु हता सर्वे भविष्यन्ति न संशयः ।

—*J.B.O.R.S.*, Vol. 14 (1928), p. 404.

<sup>34</sup> In the popular traditions Vikrama is represented as coming from Pratisthāna to Ujjain. This will suggest his association with the Āndhras or Śātavāhanas whose seat was at Pratisthāna. Compare Penzer, *Ocean of Stories*, Vol. VI, p. 232.



# AN INVESTIGATION INTO THE EFFECT OF DIFFERENT CROPPING SYSTEMS ON THE NITROGEN CONTENT OF BLACK COTTON SOIL OF THE CENTRAL PROVINCES AND BERAR\*

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INDIAN soils, in general, are deficient in organic matter and nitrogen. This is partly due to the rapid oxidation of these constituents under the conditions of high average temperature prevailing in India and partly due to the fact that most of our soils have been under cultivation for centuries, without adequate return of organic matter to the soil in the form of cattle manure or crop residues.

One of the ordinary long-standing methods of maintaining soil organic matter and nitrogen is the application of sufficient quantities of cattle dung manure to the fields. In India, a large quantity of the cattle dung is, however, employed as fuel by the cultivators and as long as no alternative source of fuel is available, this practice will continue. Our soils may therefore be considered to have reached a stationary state of minimum fertility and the data collected in respect of wheat yields in India for the period 1900-1922 indicate that such is the case, as during the period of 22 years there has been no progressive decline in the crop yield per acre.<sup>33</sup> It would thus be apparent that in the absence of any appreciable addition of manure from outside sources, the soil is able to recuperate, with the help of natural agencies, the loss of certain important constituents, suffered by it annually due to the removal of crops.

It is well known that out of the various nutrient substances taken in by the plants, nitrogen, potassium and phosphorus which are required in large quantities are generally present in inadequate quantities in our soils. A number of experiments,<sup>1, 9, 11, 12, 13, 30</sup> conducted in the past have amply proved that out of these three fertilising constituents, nitrogen appears to be pre-eminently the limiting constituent in the black cotton soil, and nitrogenous fertilisers are for this reason somewhat more popular with the cotton cultivators than the phosphatic or potassic fertilisers. While

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there are no natural agencies which can recuperate the loss of phosphorus and potash from the soil, recuperation of nitrogen losses can fortunately take place through the help of symbiotic and non-symbiotic soil bacteria, the extent of recuperation being dependent on various factors.

A study of the various factors relating to non-symbiotic nitrogen fixation in Indian soils has been carried out from time to time by various investigators.<sup>6, 10, 13, 27, 28, 31, 32, 34</sup> The question of transformations of soil nitrogen, fluctuations of nitrates in the soil in relation to crop growth and other cognate problems have also been extensively investigated.<sup>2, 3, 5, 14, 15, 19, 23, 24, 29</sup> In regard to the fixation of nitrogen in Indian soils by symbiotic bacteria, physiological studies of the nodule bacteria<sup>16, 17, 20, 25, 31</sup> and field experiments to study the effect of growing legumes in rotation with the principal non-leguminous staple field crops on the yield of the latter, have been carried out at various places.

Sand culture experiments to study the comparative nitrogen fixing power of common *kharif* and *rabi* legumes of the Province conducted by the author<sup>7</sup> showed that when the above-ground portion of the crops is removed from the land, the recuperative power in order of merit of the *kharif* legumes tried was, *tur* > *sann* > groundnut > mung > urid, and that of the *rabi* legumes was, *lakhori* > gram > *lakh* > *masur*.

In view of the striking differences in the nitrogen recuperating capacity of the various legumes as shown by the pot-culture experiments conducted under controlled conditions, it was considered necessary to study the behaviour of some of these legumes under field conditions, as we are ultimately concerned with what happens to the crops and the soil in the field.<sup>26</sup> Field experiments with various cropping systems were therefore conducted during the period 1936-41 to study the effect of the three promising *kharif* legumes, *sann*, *tur* and groundnut, on the nitrogen content of the black cotton soil and the results obtained have been recorded in this paper.

## II. Experimental

The black cotton soil tract of the Province may be approximately divided into two zones namely: (i) wet and (ii) dry, the rainfall in the case of the former varying between 40" and 50" and that in the case of the latter between 25" and 30" per annum. The present investigation was therefore carried out at the Government Experimental Farm, Nagpur, and at the Government Experimental Farm, Akola, which represent these two zones respectively. The soil of the fields which were utilised for these experiments represents the principal soil of the cotton tract which can be

texturally classified as a clay loam and is locally known as *morand*. The depth of the soil varies from 3 to 10 feet and generally does not exceed 15 feet. The soil as a rule does not show any marked horizons in its profile. Occurrence of lime concretions is however a common feature but their exact position in the soil profile depends on the depth of the soil. Results of (i) mechanical and chemical analysis, (ii) determinations of pH value, total exchangeable bases, exchangeable calcium and other cognate factors and (iii) biochemical investigations have already been published elsewhere.<sup>8</sup>

(a) *Experiment conducted at Nagpur.*—

The experiment conducted at Nagpur was designed to test the effect of growing cotton after cotton, and cotton in rotation with certain legumes, on the yield of cotton and on the nitrogen content of the soil. The treatments selected were : (i) cotton-cotton, (ii) *tur* (*Cajanus indicus*)-cotton, (iii) groundnut-cotton and (iv) *sann* (*Crotalaria juncea*)-cotton. The treatments were duplicated, the size of the individual plots was 1/20 acre (excepting two), and the design of the experiment was of a split plot type. The treatments were randomised in the first year, i.e., 1936-37, care being taken to leave adequate borders between the plots and the blocks as indicated below :—

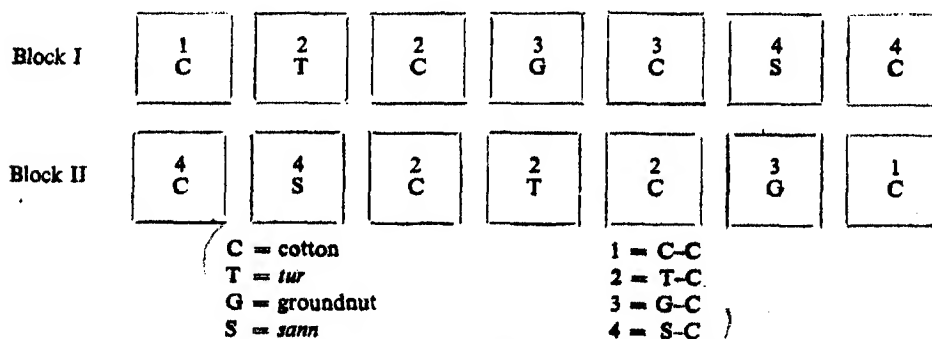


Fig. 1. A rough sketch plan of the experiment laid out on the Government Experimental Farm, Nagpur

The crops in the various plots were grown and harvested in the first year and before sowing the appropriate crops in the year 1937-38, 3 samples of soil from each plot to a depth of 9" were taken along one of the two diagonals, avoiding as usual samples very near the borders. The appropriate crops were then grown in the various plots and records of yields of cotton were maintained. Year after year till the season 1940-41, the same procedure was adopted except that, the samples of soils were not taken along the same diagonal in two successive years, the samples being thus obtained

from a fairly representative area of the plots during the course of 4 years. 168 Samples of soil in all from the 14 plots were taken during the course of the experiment and determinations of moisture, nitrite (Griess Ilosvay method), nitrate (Phenol-di-sulphonic acid method) and organic and ammoniacal nitrogen (Bal's modification of Kjeldahl's method<sup>4</sup>) were carried out in order to ascertain the total nitrogen content on moisture-free basis.)

*Effect of cropping systems on soil nitrogen.*—Results of total nitrogen estimations were statistically analysed and a combined analysis of the results of 4 years is given in Table I.

TABLE I

*Combined analysis of 4 years' results of determinations of total nitrogen content of the soil from the various plots*  
*Analysis of variance*

Due to	Sum of squares	D.F.	Mean square	Treatment mean square/ Error variance	
				Observed value of "F"	Expected @ 5% level
Blocks .. .. .	1145.58	1	1145.58	27.08*	4.26
Rotations .. ..	927.06	3	309.02	7.30*	3.01
Seasons .. .. .	126.47	3	42.15	0.99†	8.64
Blocks × Rotations .. ..	251.52	3	83.84	1.98†	3.01
Blocks × Seasons .. ..	133.81	3	44.60	1.05†	3.01
Rotations × Seasons .. ..	1174.71	9	130.52	3.08*	2.32
Blocks × Rotations × Seasons	471.53	9	52.39	1.23†	2.32
Error .. .. .	1015.84	24	42.30	..	..
Sampling error .. .. .	3073.16	112	27.44	..	..
Total .. .. .	8319.08	167	..	..	..

\* Significant.

† Not significant.

Analysis of variance given above shows that the sampling error is smaller than the experimental error and is not statistically significant. As the rotations are found to produce significant differences, results obtained in this behalf are given in Table II below :—

TABLE II

*Effect of various systems of cropping on the nitrogen content of the soil*

	Mean nitrogen content in mgm. per 100 gm. of dry soil				G.M.	S.E. of tr. mean	“ Z ” test sig. @ 5%	Crit. diff. @ 5%
	C-C	T-C	G-C	S-C				
Mean .. ..	61.05	63.70	60.94	66.63	63.08	1.63	Yes	4.76
% on G.M. ..	96.78	100.98	96.60	105.62	100.00	2.58	..	7.54

Conclusions :—S-C T-C ~~C-C~~ ~~G-C~~

These results show that cotton grown in rotation with *sann*, leaves significantly greater quantities of nitrogen in the soil than the treatments ‘cotton-cotton’ and ‘groundnut-cotton’, there being no significant difference between the latter two. Nitrogen content of the soil in the ‘*sann*-cotton’ rotation though higher than that in the ‘*tur*-cotton’, the difference is not significant.

The position of soil nitrogen after the removal of various crops in the respective seasons was next examined. Thus for example, the rotations can be said to represent the following 7 treatments :—(1) cotton after cotton, (2) cotton after *tur*, (3) cotton after groundnut, (4) cotton after *sann*, (5) *tur* after cotton, (6) groundnut after cotton and (7) *sann* after cotton. An analysis of the results and mean nitrogen values on the basis of these 7 treatments given in Tables III and IV show the following :—

1. It is seen that within the individual rotations the nitrogen content of the soil though strikingly higher after the removal of the legumes than that after the removal of cotton, the differences are not significant.

2. While there was no significant difference between the two rotations ‘*sann*-cotton’ and ‘*tur*-cotton’ *vide* Table II, nitrogen content of the soil after *sann* is significantly higher than that after *tur*.

# Effect of Cropping Systems on Nitrogen Content of Black Cotton Soil 17

TABLE III

*Effect of growing cotton after cotton, cotton after legumes and legumes after cotton on the nitrogen content of the soil*  
*Analysis of variance*

Due to	Sum of squares	D.F.	Mean square	Treatment mean square/ Error variance	
				Observed value of "F"	Expected @ 5% level
Blocks .. ..	1145.58	1	1145.58	27.43*	4.41
Treatments .. ..	1159.76	6	193.29	4.62*	2.66
Seasons .. ..	126.47	3	42.15	1.01†	3.16
Blocks × Seasons .. ..	133.81	3	44.60	1.07†	3.16
Blocks × Treatments .. ..	265.49	6	44.24	1.06†	2.66
Treatments × Seasons .. ..	1663.22	18	92.40	2.21†	2.22
Blocks × Treatments × Seasons	751.59	18	41.75	..	..
Sampling error .. ..	3073.16	112	27.43	..	..
Total ..	8319.08	167	..	..	..

\* Significant.

† Not significant.

TABLE IV

*Effect of growing cotton after cotton, cotton after legumes and legumes after cotton on the nitrogen content of the soil*

Systems of cropping	cotton-cotton	tur-cotton		gr.nut-cotton		sann-cotton		G.M.	S.E. of tr. mean	"Z" test sig. @ 5%	Crit. diff. 5%
Crop grown previous to taking soil samples	cotton (C-C)	cotton (C-T)	tur (T-C)	cotton (C-G)	gr.nut (G-C)	cotton (C-S)	sann (S-C)				
Mean nitrogen content in mgm. per 100 gm. of dry soil % on G.M.	61.05	63.07	64.32	59.64	62.24	64.97	68.29	63.37	1.32	Yes	3.92
	96.33	99.52	101.50	94.11	98.21	102.52	107.76	100.00	2.08	..	6.18

Conclusions : — S-C C-S T-C C-T G-C C-C C-G

✓ The comparative position of soil nitrogen in the 'cotton-cotton' treatment and that after the removal of the various legumes included in the three rotations can be seen from the results given in Tables V and VI.

TABLE V  
*Nitrogen content of the soil after cotton or legumes*  
*Analysis of variance*

Due to	Sum of squares	D.F.	Mean square	Treatment mean square/ Error variance	
				Observed value of "F"	Expected @ 5% level
Blocks .. .. .	503.48	1	503.48	15.24*	5.12
Rotations .. .. .	728.19	3	242.75	7.35*	3.86
Seasons .. .. .	238.11	3	79.37	2.40†	3.86
Blocks × Rotations .. .. .	232.21	3	77.40	2.34†	3.86
Blocks × Seasons .. .. .	149.74	3	49.91	1.51†	3.86
Rotations × Seasons .. .. .	670.49	9	74.49	2.25†	3.23
Blocks × Rotations × Seasons	297.19	9	33.02	..	..
Sampling error .. .. .	2007.38	64	31.36	..	..
Total .. .. .	4826.79	95	..	..	..

\* Significant.

† Not significant.

TABLE VI  
*Residual effects of cotton and legumes on the nitrogen content of the soil*

Systems of cropping	cotton-cotton	tur-cotton	gr.nut-cotton	sann-cotton	G.M.	S.E. of tr. mean	"Z" test sig. @ 5%	Crit. diff. @ 5%
Crop grown previous to taking soil samples	cotton	tur	gr.nut	sann				
Mean nitrogen content in mgm. per 100 gm. of dry soil	61.05	64.32 †	62.24	68.29	63.97	1.17	Yes	3.74
% on G.M.	95.43	100.54	97.29	106.75	100.00	1.82	..	5.84

Conclusions :—sann .. tur .. groundnut .. cotton ..

## *Effect of Cropping Systems on Nitrogen Content of Black Cotton Soil 19*

These results show that the nitrogen content of the soil after removal of the crops is found to be of the following order :—

*Sann* > *tur* > groundnut > cotton, *sann* giving significantly higher results than the other crops.

✓ The position of soil nitrogen after the removal of cotton in the treatments cotton after cotton and that after the removal of cotton preceded by various legumes included in the three rotations was similarly examined and the results obtained *vide* Tables VII and VIII show, that cotton after *sann* leaves significantly higher nitrogen in the soil than cotton after cotton or cotton after groundnut. Cotton after *tur* also leaves significantly higher nitrogen in the soil than cotton after groundnut.

TABLE VII

*Nitrogen content of the soil after cotton from the various cropping systems*  
*Analysis of variance*

Due to	Sum of squares	D.F.	Mean square	Treatment mean square/ Error variance	
				Observed value of "F"	Expected @ 5% level
Blocks .. ..	505.66	1	503.66	..	..
Rotations .. ..	391.55	3	130.51	4.73*	3.86
Seasons .. ..	65.33	3	21.77	0.79†	8.84
Blocks × Rotations ..	170.45	3	56.81	2.06†	5.86
Blocks × Seasons ..	71.00	3	23.66	0.86†	8.84
Rotations × Seasons ..	958.28	9	106.47	3.86*	3.23
Blocks × Rotations × Seasons	248.29	9	27.58	..	..
Sampling error .. ..	1095.79	64	17.12	..	..
Total ..	3504.35	95	..	..	..

\* Significant.

† Not significant.



TABLE VIII

*Effect of growing cotton after cotton and cotton after legumes on the nitrogen content of the soil*

Systems of cropping	cotton-cotton	tur-cotton	gr.nut-cotton	sann-cotton	G.M.	S.E. of tr. mean	" Z " test sig. @ 5%	Crit. diff. @ 5%
Crop grown previous to taking soil samples	cotton (C-C)	cotton (C-T)	cotton (C-G)	cotton (C-S)				
Mean nitrogen content in mgm. per 100 gm. of dry soil	61.05	63.07	59.64	64.97	62.18	1.07	Yes	3.42
% on G.M.	98.18	101.43	95.91	104.48	100.00	1.72	..	5.50

Conclusions : — C-S C-T C-C C-G

(e) *Effect of cropping systems on the yield of cotton.*—The effect of the 4 major treatments on the yield of cotton can be seen from the data presented in Tables IX and X.

TABLE IX

*Combined analysis of 4 years' results of yield of seed cotton from the various plots*  
*Analysis of variance*

Due to	Sum of squares	D.F.	Mean square	Treatment mean square/ Error variance	
				Observed value of " F "	Expected @ 5% level
Blocks .. ..	211087.56	1	211087.56	38.17	..
Rotations .. ..	87617.80	3	29205.93	5.28*	3.86
Seasons .. ..	995642.60	3	331880.86	60.01*	3.86
Blocks × Rotations ..	94570.40	3	31523.46	5.70*	3.86
Blocks × Seasons .. ..	53974.60	3	17991.53	3.25†	3.86
Rotations × Seasons ..	144143.60	9	16015.95	2.89†	3.19
Blocks × Rotations × Seasons	49772.94	9	5530.32	..	..
Total ..	1636809.50	31	..	..	..

\* Significant.

† Not significant.

TABLE X

*Effect of different cropping systems on the yield of seed cotton*

Systems of cropping	cotton- cotton (C-C)	tur- cotton (T-C)	gr.nut- cotton (G-C)	sann- cotton (S-C)	G.M.	S.E. of tr. mean	" Z " test sig. @ 5%	Crit. diff. @ 5%
Mean yield of seed cotton in lb. per acre	342.4	430.5	293.9	398.1	366.2	26.29	Yes	84.09
% on G.M.	93.5	117.5	80.2	108.7	100.0	7.18	..	22.96

Conclusions :—T-C      S-C      C-C      G-C

These results show that the yield of cotton after *tur*, being higher than that after *sann*, the difference is not statistically significant. Cotton preceded by *tur* is significantly better than the treatments cotton after cotton and cotton after groundnut. The 'groundnut-cotton' rotation under the conditions at Nagpur does not show any particular advantage either in respect of yield of cotton or in respect of soil nitrogen over the 'cotton-cotton' treatment.

*Effect of growing cotton after cotton on soil nitrogen.*—In a previous investigation<sup>10</sup> seasonal fluctuations in organic nitrogen content of the black cotton soil were studied for one year by taking samples of soil from the field every month from April to November. Results obtained showed that while there was no definite indication of any periodical decrease or increase in the nitrogen content of the soil, the nitrogen fixing power of the soil was found to be somewhat higher in the months of May, June and July, than that in the months of August to November. In view of this observation it was considered desirable to study the data obtained in the present investigation with a view to determining the annual fluctuations, if any, in the nitrogen content of the soil which is put under cotton only from year to year, and the results obtained have been examined from this point of view, *vide* Tables XI and XII.

TABLE XI

*Yearly fluctuations in nitrogen content of the Nagpur soil growing cotton after cotton*  
*Analysis of variance*

Due to	Sum of squares	D.F.	Mean square	Treatment mean square/ Error variance	
				Observed value of "F"	Expected @ 5% level
Blocks .. .. .	0.047	1	0.047	..	..
Seasons .. .. .	143.837	3	47.945	15.70*	9.28
Blocks × Seasons .. .. .	9.160	3	3.053	..	..
Sampling error .. .. .	271.925	16	16.995	..	..
Total .. .. .	424.969	23	..	..	..

\* Significant.

TABLE XII

*Yearly fluctuations in nitrogen content of the Nagpur soil growing cotton after cotton*

Years	1937-38 (Y <sub>1</sub> )	1938-39 (Y <sub>2</sub> )	1939-40 (Y <sub>3</sub> )	1940-41 (Y <sub>4</sub> )	G.M.	S.E. of tr. mean	"Z" test sig. @ 5%	Crit. diff. @ 5%
Mean nitrogen content in mg. per 100 gm. of dry soil	63.35	62.58	61.26	57.01	61.05	0.71	Yes	3.19
% on G.M. .. .. .	103.76	102.50	100.34	93.38	100.00	1.16	..	5.22

Conclusions :— $\overline{Y_1}$   $\overline{Y_2}$   $\overline{Y_3}$   $\overline{Y_4}$

These results show that only in one out of the 4 years, the nitrogen content of the soil was significantly lower than that present in the soil during the remaining 3 years. The finding previously reported<sup>10</sup> that under field conditions both loss of nitrogen and recuperation of nitrogen take place, the latter phenomenon occurring more frequently than the former, is thus confirmed. The soil, as has been mentioned earlier in this paper, may

## *Effect of Cropping Systems on Nitrogen Content of Black Cotton Soil 23*

thus be said to have reached a stationary state of low level fertility in respect of nitrogen, the amount removed by crops being recuperated from year to year with the help of natural agencies, the experimental plots not having been manured during the period of 5 years.

### *(b) Experiment conducted at Akola.—*

An experiment of the split plot design to test the comparative effect of various rotations on the yield of cotton was in progress for some years on the Government Experimental Farm, Akola, and advantage of this was taken through the courtesy of the Economic Botanist for Cotton, Nagpur, to ascertain the effect of certain selected systems of cropping on the nitrogen content of the soil.

The systems of cropping selected for this purpose were (1) cotton-cotton, (2) groundnut-cotton, (3) groundnut-cotton-*juar* and (4) *juar*-cotton. It will thus be seen that while the experiment at Nagpur dealt with the systems of growing either cotton every year or cotton in rotation with various legumes in two course rotations, the systems of cropping selected at Akola include growing cotton every year and in rotation with either a legume (groundnut) or a cereal (*juar*) in a two course rotation, as well as cotton with groundnut and *juar* in a three course rotation. The treatments were randomised and were replicated five times. The size of the individual plots was 1/10 acre, and adequate borders were left between the plots and the blocks. The general lay-out of the experiment and the distribution of the various treatments in the first year, *i.e.*, 1936-37 are indicated in Fig. 2.

The method of taking soil samples and the methods of analysis employed were the same as those employed in the case of the experiment at Nagpur. 480 Samples of soil in all from the 40 plots were taken and analysed during the course of 4 years at the rate of 3 samples per plot per year. The results of analysis were in the first instance examined with a view to studying the position of soil nitrogen after the removal of each of the 3 crops included in the systems of cropping, on the assumption that there were in all 8 possible treatments within the 4 cropping systems under investigation as shown in Table XIV.

A combined analysis of the 4 years' results given in Table XIII shows that the various treatments do not produce any significant variation in the nitrogen content of the different plots.

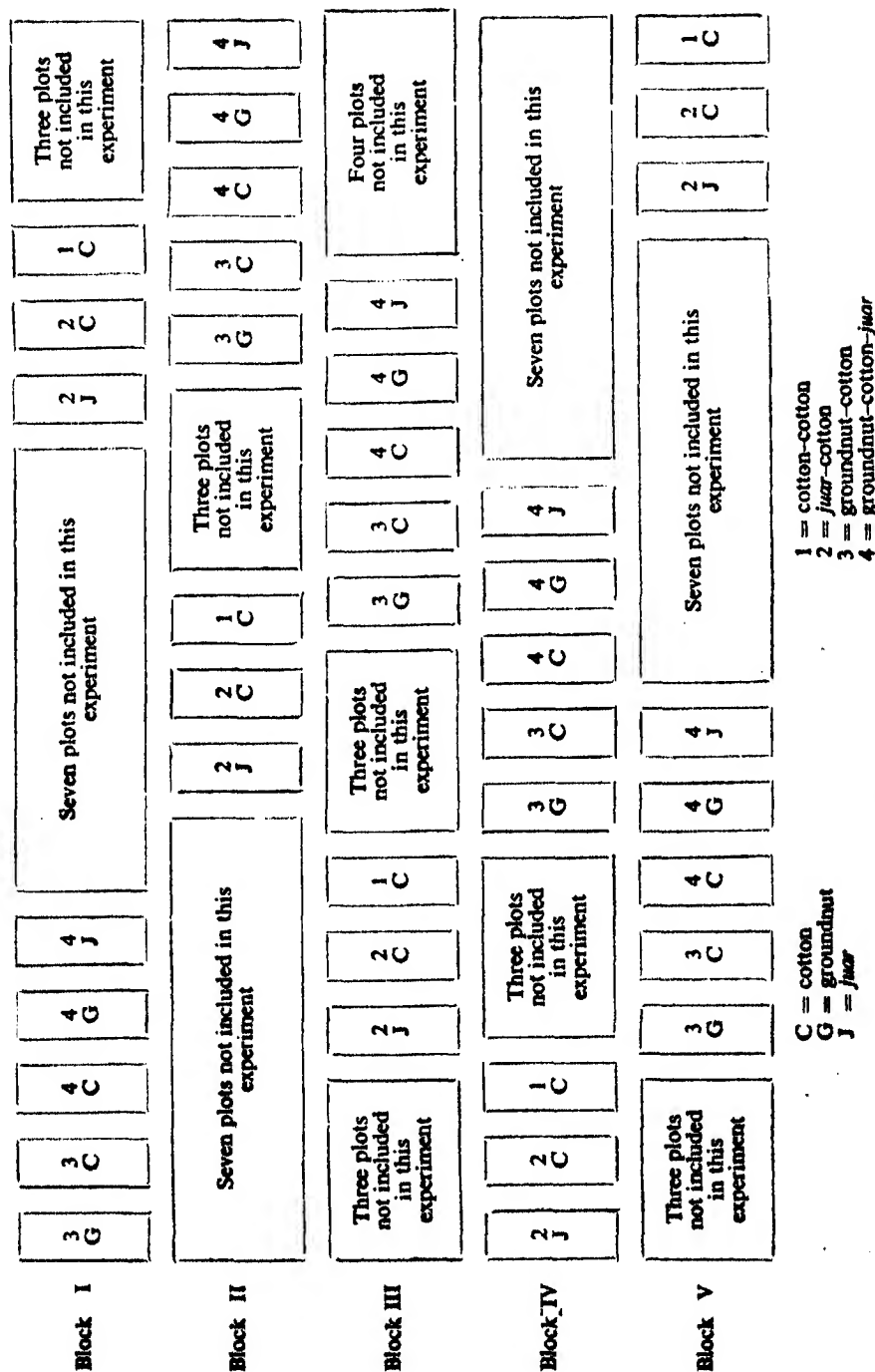


FIG. 2. A rough sketch plan of the selected experimental plots from the Government Experimental Farm, Akola

TABLE XIII

*Combined analysis of 4 years' results of determinations of soil nitrogen from the Akola experimental plots*

*Analysis of variance*

Due to	Sum of squares	D.F.	Mean square	Treatment mean square/ Error variance	
				Observed value of "F"	Expected @ 5% level
Blocks .. .. .	309.94	4	77.48	1.11†	2.49
Treatments .. .. .	972.45	7	138.92	1.99†	2.12
Seasons .. .. .	3773.77	3	1257.92	18.07*	2.72
Blocks × Treatments .. .. .	2454.92	28	87.67	1.25†	1.54
Blocks × Seasons .. .. .	5673.09	12	472.75	6.79	1.88
Treatments × Seasons .. .. .	1373.01	21	65.38	0.93†	1.89
Blocks × Treatments × Seasons	5845.57	84	69.59	..	..
Sampling error .. .. .	15229.25	320	47.59	..	..
Total .. .. .	35632.00	479			

\* Significant.

† Not significant.

Although the treatments are not significant, mean figures of soil nitrogen in respect of the various treatments as well as in respect of the four cropping systems are given in Tables XIV and XV respectively with a view to obtaining an idea about the general trend of variations in soil nitrogen.

TABLE XIV  
*Effect of different treatments on the nitrogen content of the Akola soil*

Systems of cropping	cotton-cotton	juar-cotton		gr.nut-cotton		gr.nut-cotton-juar			G.M.	S.E. of tr. mean	"Z" test sig. @ 5%	Crit. diff. @ 5%
	cotton (T <sub>1</sub> )	juar (T <sub>2</sub> )	cotton (T <sub>3</sub> )	gr.nut (T <sub>4</sub> )	cotton (T <sub>5</sub> )	gr.nut (T <sub>6</sub> )	cotton (T <sub>7</sub> )	juar (T <sub>8</sub> )				
Crop grown previous to taking soil samples												
Mean nitrogen content in mgm. per 100 gm. of dry soil	47.84	47.66	46.99	50.17	51.08	49.57	48.13	47.06	48.56	1.08	No	2.98
% on G.M.	98.51	98.14	96.76	103.31	105.18	102.07	99.11	96.91	100.00	2.22	..	6.13

TABLE XV

*Effect of different cropping systems on the nitrogen content of the Akola soil*

Systems of cropping	cotton-cotton	juar-cotton	gr.nut-cotton	gr.nut-cotton-juar	General mean	Standard error
Mean nitrogen content in mgm. per 100 gm. of dry soil	47.84	47.32	50.62	48.25	48.51	1.08

Results given above are in agreement with those obtained at Nagpur, *vide* Table VI, showing that although inclusion of groundnut in a two course rotation, 'groundnut-cotton', shows a somewhat higher nitrogen in the soil than 'cotton-cotton', the difference is not significant.

There is also no significant variation in the nitrogen content of the soil, after the 'cotton-cotton' treatment, or cotton preceded by *juar* in the two course rotation, or cotton preceded by groundnut either in a two or three course rotation, *vide* Table XVI. Mean nitrogen content of the soil given in Table XVII, however, again indicates that cotton preceded by groundnut in a two course rotation shows higher residual nitrogen in the soil than that found in the case of 'cotton-cotton'.

TABLE XVI

*Effect of cotton after cotton, cotton after juar and cotton preceded by groundnut in two and three course rotations on the nitrogen content of the Akola soil*  
*Analysis of variance*

Due to	Sum of squares	D.F.	Mean square	Treatment mean square/ Error variance	
				Observed value of "F"	Expected @ 5% level
Blocks .. .. .	505.92	4	126.48	1.15†	2.63
Seasons .. .. .	2320.88	3	773.62	7.06*	2.86
Treatments .. ..	571.38	3	190.46	1.73†	2.86
Blocks × Seasons .. ..	4709.80	12	392.48	3.58*	2.03
Blocks × Treatments .. ..	1303.15	12	108.59	0.99†	2.03
Treatments × Seasons .. ..	971.34	9	107.81	0.98†	2.82
Blocks × Treatments × Seasons	3942.32	36	109.50	..	..
Sampling error .. ..	10683.44	160	66.77	..	..
Total .. .. .	25008.23	239	..	..	..

\* Significant.

† Not significant.



TABLE XVII

*Effect of various treatments on the mean nitrogen content of the Akola soil*

Systems of cropping ..	cotton-cotton	gr.nut-cotton	juar-cotton	gr.nut-cotton-juar	G.M.	S.E.
Crop grown previous to taking soil samples	cotton	cotton	cotton	cotton		
Nitrogen in mgm. per 100 gm. of dry soil	47.84	51.08	46.99	48.13	48.51	1.35

The position of soil nitrogen after the removal of cotton crop in the 'cotton-cotton' treatment, and after the removal of groundnut in the two and three course rotations was next examined, and the results given in Table XVIII show that there are no significant differences in the nitrogen content of the soil. Mean nitrogen values given in Table XIX however show that the nitrogen content of the soil after the removal of groundnut crop in the two course rotation is appreciably higher than that after the removal of cotton from the 'cotton-cotton' treatment.

TABLE XVIII

*Nitrogen content of the soil after cotton and groundnut after cotton.*  
*Analysis of variance*

Due to	Sum of squares	D.F.	Mean square	Treatment mean square/ Error variance	
				Observed value of "F"	Expected @ 5% level
Blocks .. .. .	381.63	4	95.40	3.21*	2.78
Treatments .. .. .	175.04	2	87.52	2.94†	3.40
Seasons .. .. .	1867.33	3	622.44	20.96*	3.01
Blocks × Treatments .. .. .	567.41	8	70.92	2.39	2.36
Blocks × Seasons .. .. .	2166.46	12	180.53	6.08*	2.18
Treatments × Seasons .. .. .	107.28	6	17.88	0.60†	3.84
Blocks × Treatments × Seasons	712.61	24	29.69	..	..
Sampling error .. .. .	6329.31	120	52.74	..	..
Total .. .. .	12307.07	179	..	..	..

\* Significant.

† Not significant.

**TABLE XIX**  
*Mean nitrogen content of the Akola soil after cotton and groundnut after cotton in two and three course rotations*

Systems of cropping .. ..	cotton-cotton	groundnut-cotton	groundnut-cotton-juar	G.M.	S.E.
Crop grown previous to taking soil samples	cotton	groundnut	groundnut		
Nitrogen in mgm. per 100 gm. of dry soil	47.84	50.17	49.57	49.19	0.70

*Effect of groundnut in two and three course rotation on soil nitrogen.*—Residual effect on soil nitrogen after the removal of the groundnut crop included in the two and three course rotations not being significant, details in respect of analysis of variance and figures of mean nitrogen content of the soil in this behalf have not been given here.

*Yearly fluctuations in nitrogen content of the soil growing cotton after cotton.*—Results given in Tables XX and XXI show that there are no significant variations in the nitrogen content of the soil from year to year. In one out of the 4 years the nitrogen content of the soil was however lower than that in the remaining 3 years. These results are therefore in general agreement with those obtained in the case of the Nagpur experiment. They also confirm the view that the phenomenon of nitrogen fixation is more frequent than that of loss of nitrogen and that the soil is ordinarily able to maintain with the help of natural agencies, its present low level of nitrogen content without any appreciable additions of nitrogenous manures from outside sources.

**TABLE XX**  
*Yearly fluctuations in nitrogen content of the Akola soil growing cotton after cotton*  
*Analysis of variance*

Due to	Sum of squares	D.F.	Mean square	Treatment mean square/ Error variance	
				Observed value of "F"	Expected @ 5% level
Blocks .. ..	271.381	4	67.84	0.76†	5.91
Years .. ..	506.745	3	168.91	1.90†	3.49
Error .. ..	1076.206	12	88.68	..	..
Sampling error .. ..	3794.730	40	94.86	..	..
Total ..	5649.062	59	..	..	..

† Not significant.

TABLE XXI

*Nitrogen content of the Akola soil from year to year, growing cotton after cotton*

	1936-37	1937-38	1938-39	1939-40	G.M.	S.E. of tr. mean	"Z" test sig. @ 5%	Crit. diff. @ 5%
Mean nitrogen in mgm. per 100 gm. of dry soil	45.92	52.26	48.53	44.67	47.84	2.43	No	7.49
% on G.M. . . . .	95.98	109.23	101.44	93.37	100.00	5.07	..	15.65

*Effect of the various cropping systems on the yield of cotton.*—The effect of various cropping systems on the yield of cotton having been previously fully dealt with by Mahta and Janoria,<sup>22</sup> it has not been again considered here. They have shown that cotton preceded by groundnut either in a two or three course rotation gives better yields than cotton after cotton and this finding has been confirmed by Mahalanobis<sup>21</sup> after analysing the data statistically. These results in so far as the yield of cotton is concerned, are not therefore in agreement with those obtained at Nagpur.

### III. Acknowledgment

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### IV. Summary

Results of field experiments conducted to study the effect of different cropping systems on the nitrogen content of black cotton soil from Nagpur and Akola together with the data of yields of cotton from the Nagpur experiment have been given.

#### (a) Nagpur experiment.—

1. It has been observed that cotton grown in rotation with *sann* leaves significantly greater quantities of nitrogen in the soil than the treatments (i) 'cotton-cotton' or (ii) 'groundnut-cotton', there being no significant difference between the latter two.

2. (a) Nitrogen content of the soil in the 'sann-cotton' rotation though higher than that in 'tur-cotton', the difference is not significant.

(b) If, however, the soil nitrogen after the removal of *sann* and *tur* only is considered instead of the effect of the two cropping systems as a whole, the former shows significantly higher residual nitrogen in the soil than the latter.

3. Nitrogen content of the soil within the individual rotations, after the removal of legumes though higher than that after the removal of cotton, the differences are not significant.

4. (a) A comparison of the nitrogen status of the soil after the removal of legumes in the two course rotations with that of the plots under the 'cotton-cotton' treatment shows, that *sann*-hemp leaves significantly higher nitrogen in the soil than *tur*, groundnut or cotton.

(b) Cotton preceded by *sann* shows significantly higher soil nitrogen than that shown by cotton preceded by cotton or groundnut.

5. Yield of cotton in the 'tur-cotton' rotation though higher than that in the 'sann-cotton' rotation, the difference is not significant. Cotton preceded by *tur* is significantly better than 'cotton-cotton' or 'groundnut-cotton'.

6. The 'groundnut-cotton' rotation under the conditions at Nagpur does not show any particular advantage either in respect of yield of cotton or in respect of soil nitrogen over the 'cotton-cotton' treatment.

7. It is seen that under field conditions both loss of nitrogen and recuperation of nitrogen take place, but the latter phenomenon occurs more frequently than the former. The nitrogen content of the soil growing cotton after cotton was lower only in one out of the 4 years, than that present in the remaining 3 years.

(b) *Akola experiment.*—

1. Results of the Akola experiments are also in agreement with those obtained at Nagpur showing that although inclusion of groundnut in the two course rotation 'groundnut-cotton' shows a somewhat higher nitrogen in the soil than 'cotton-cotton', the difference is not significant.

2. There is also no significant variation in the nitrogen content of the soil after the 'cotton-cotton' treatment, or cotton preceded by *juar* in the two course rotation, or cotton preceded by groundnut either in a two or three course rotation.

3. Nitrogen content of the soil after the removal of groundnut in the two course rotation is higher than that after the removal of cotton in the 'cotton-cotton' treatment, but the difference is not significant.

4. There are no significant annual fluctuations in soil nitrogen in the plots growing cotton year after year. These results are therefore in general agreement with those obtained at Nagpur.

5. Cotton preceded by groundnut either in a two or three course rotation gives better yields than cotton after cotton. These results are not therefore in agreement with those obtained at Nagpur.

(c) General.—

1. *Sann-hemp, tur* and groundnut when grown in rotation with cotton show a higher nitrogen in the soil than cotton after cotton.

2. The beneficial effect of growing groundnut on the soil nitrogen is not however statistically significant either at Nagpur or at Akola.

3. There are no significant variations in soil nitrogen from year to year in the plots growing cotton after cotton both at Nagpur and at Akola.

4. The 'groundnut-cotton' rotation under the conditions at Nagpur does not show any particular advantage in respect of the yield of cotton although this rotation has been found to be significantly better than 'cotton-cotton' at Akola.

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## CHRISTOPHER MARLOWE

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THE subject of my lecture to-night, as you are aware, is Christopher Marlowe. Marlowe died nearly three hundred and fifty years ago and it is not likely that I could have come to many original conclusions about him. But Marlowe is an important figure and any study of him is not wasted. Shakespeare was undoubtedly the greatest tragedian of the Elizabethan period. There were only two dramatists who deserved to be ranked immediately below him and at the same time above others. Of these Webster came after Shakespeare and thus had opportunities of learning from him and Kyd, whereas Marlowe had no models to follow. For a scholar who wishes to acquaint himself with the English Literature, or even Shakespeare, a careful study of Marlowe is indispensable. He must know Marlowe thoroughly, before he can understand the greatest of English Poets and the most popular of English poetical measures. Before, however, I begin to discuss Marlowe's achievements I must give you a very brief outline of Marlowe's life and character.

We know very little about his life. He was the second child and the eldest son of John Marlowe of Canterbury and was born on the 6th of February in the year 1563 or 1564. At the age of fourteen he was admitted to a scholarship at the Ancient King's School. From school he proceeded to Cambridge where some think he went to Trinity and others that he joined Corpus Christi. Evidence on the whole seems to be stronger in favour of the latter college. At Corpus his name was differently spelt and a continuous change in the spelling of his name has caused considerable trouble to those who make researches. We are now certain from Dr. Moore Smith's account that he took his B.A. in 1582 and his M.A. in 1587. During his six years at Cambridge he was once employed on diplomatic service by Government and went to France and it was only through the intervention of the Privy Council that he got his degree of M.A.

From this time onwards to his arrival in London the materials are very scanty and in no sense enough to construct even an outline account of his activities. We learn that while he was in London he was writing plays and poems. Regarding the dates of these plays I will have something to say in a later part of this paper. His circle of friends in London does not seem to have been large but he was fairly well-known. Meres, in his

*Palladis Tamia*, makes a mention of Marlowe, and Shakespeare, in his *As You Like It*, echoes a line out of *Hero and Leander*. Besides this Kyd, Nash, Greene, Peele and Blunt have all written about the young dramatist.

Apart from his literary activities he was a well-known figure in politics, but only politics of the baser type, that of intrigue and conspiracy. He allied himself to Walsingham and knew a gentleman by the name of Poley. In Poley's hands Marlowe was a mere pawn and to the end of his days the dramatist was connected with this person. All the politics that could have been in Marlowe will become apparent if we know what kind of a man this Poley was. Poley was an important man of his times. He had a hand in the Babington plot and though one of the chief movers he managed to save his neck while his associates Babington and Ballard were brought to the block. He was a man of no morals and no scruples and asserted that—'it is noe matter for I will swear and forswear my selffe rather than I will accuse myselffe to do me any harm'. He eloped with Joan Yeomans (the wife of a friend) and was in jail more than once. In his company it is suspected Marlowe even counterfeited money. Into further details about Poley's life we need not enter, what we have already said is sufficient to bring out his character and it is not creditable for Marlowe to have associated with him.

Marlowe was also mixed up at this time with Raleigh and Chomley who belonged to a set of Atheists. Robert Parson writing in his *Responsio ad Elizabethæ edictum* (1592) says . . . 'Of Sir Walter Rawley's school of atheism by the waye, and of the Conjurer that is master thereof, and of the diligence vsed to get yong gentlemen of this schoole, where in both Moyses and our Sauior, the olde, and the new Testamente are iested at, and the schollers taughte amonge other thinges, to spell God backward'. . . . If Marlowe was mixed up with these people the charge laid at his door that he was an Atheist has some truth. Of all the letters which have survived to us from the days of Queen Elizabeth, perhaps the most curious are the two letters written to Sir John Puckering by Thomas Kyd the author of the *Spanish Tragedy*. I will read to you an extract or two out of them. He says:—

"When I was first suspected for that Libell that concerned the state, amongst those waste and idle papers (which I carde not for) and which vnaskt I did deliuer up, were founde some fragmentes of a disputation, toching that opinion, affirmed by Marlowe to be his, and shuffled with some of myne (vnknown to me) by some occasion of our wrytinge in one chamber twee yeares synce.



"My first acquaintance with this Marlowe, rose upon his bearing name to serve my Lord, although his Lordship never knewe his service, but in writing for his plaiers ffor never cold my Lord endure his name or sight, when he had heard of his conditions, nor wold indeed the forme of devyne praiers vsed duellie in his Lordships house, haue quadred with such reprobates.

"That I shold loue or be familer frend, with one so irreligious, were verie rare, when Tullie saith *Digni sunt amicitia quibus in ipsis inest causa cur diligentur* which neither was in him, for person, quallities, or honestie, besides he was intemperate & of a cruel hart, the verie contraries to which, my greatest enemies will saie by me.

"It is not to be nombred amongst the best conditions of men, to taxe or to opbraide the dead *quia mortui non mordent*. But this much haue I (with your Lordships favor) dared in the greatest cause, which is to cleere myself of being thought an Atheist; which some will sweare he was."

Again he says in another letter:—

"Pleaseth it your honourable Lordship toching Marlowes monstrous opinions as I cannot but with an aggrieved conscience think on him or them so can I but perticularize fewe in the respect of them that kept him greater company. Howbeit in discharge of dutie both towardes god and your lordships & the world thus much haue I thought good breiffie to discover in all humbleness.

"ffirst it was his custom when I knew him first & as I heare saie he contynewd it in table talk or otherwise to iest at the devine scriptures gybe at praiers, & stryve in argument to frustrate & confute what hath byn spoke or wrytt by prophets & such holie menn."

As an alternative charge Baines alleges that Marlowe favoured Papistry and says that Marlowe asserted that "all protestantes are 'Hypocriticall asses'." Of the Atheistic views of Marlowe, Baines writes that 'this Marlowe doth not only hould them himself, but almost into every company he cometh he perswades men to Atheism willing them not to be afraid of bugbears and hobgoblins . . . and al men with whom he hath conversed any time will testify the same.' Other witnesses have declared that Marlowe 'is a great blasphemer & leight esteemer of Religion; and thereaboutes cometh not to Devine service or sermons'; that he 'did teare twoe Leaves out of a Bible to drye Tobacco on'; that 'when he was like to dye, being perswaded to make himselfe reddye to God for his soule' he answered, 'he

woulde carrye his soule vp to the topp of an hill, and runne god, runne devill, fetch it that will haue it.' These are but a few quotations I have chosen to give you an idea of the opinions held by this man. He was not liked very much by other men who were religious and we find records of general disapproval. Warnings did not serve their turn. Greene's warning in *A Groatworth of Wit* was addressed specially to Marlowe as is evident from the words in which it is put. He says:—

"Wonder not (for with thee will I first beginne), thou famous gracer of tragedians—i.e., Marlowe—that Green, who hath said with thee, like the foole in his heart, 'There is no God,' should now give glory vnto his greatnesse. . . . Why should thy excellent wit, his gift, be so blinded that thou shouldest giue no glory to the giuer? Is it pestilent Machiuilian policie that thou has studied? O peevisch follie."

Over the rest of Marlowe's inglorious private life the poppy of oblivion had better be shed. Let us hasten to his death. His end was tragic and as some say it was a retribution for his many blasphemies. At Deptford on the 1st of June 1593 a fellow named Ingram Freezer pierced Marlowe in the eye 'in such sorte, that his braines coming out at the daggers point, hee shortlie after dyed.' The Coroner's report was that "*Morley ex subito et ex Malicia sua*" was attacking Freezer when the latter "*Sua defensione et saluacione vite sua*" took away the dagger and inflicted *unam plagam Mortalem* which *plaga mortali* killed Christopher Morley instantly. Fortunately two things have since been disproved. One that Marlowe was a would-be murderer, for evidence shows that Ingram Freezer killed Marlowe because he owed money to our dramatist; secondly that it was not in a drunken brawl after a lewd love as Mr. Collier would have us believe. A ballad called the *Atheist's Tragedy* may or may not have been written to commemorate Marlowe's death but most probably it is one of Mr. Collier's many forgeries.

The period of Marlowe's dramatic activity lasted from the days of his college residence at Cambridge to perhaps a short time before his death. The two parts of *Tamburlaine* were published in 1590 but a remark in Greene's prefatory epistle to *Perimedes the Blacksmith* makes a reference to one *Atheist Tamburlaine*, which makes us assign the two plays to the years 1587 and 1588. The earliest copy of *Dr. Faustus* we possess was published by Thomas Bushell in 1604. Boas assigns the play to the years 1598-99 forgetting that the author was then dead five years or upwards. I think *Dr. Faustus* followed *Tamburlaine* and came into being about the year 1590.

The *Jew of Malta* must have been composed about the years 1591 or 1592, for a change in Marlowe's style is henceforward noticeable. The last play to be composed was *Edward II* and is unanimously assigned to the years 1592-93. During these times were written also *Dido of Carthage*, *The Massacre at Paris* and perhaps also *The True Tragedy of Richard, Duke of Yorke*. *Hero and Leander* was first published in 1593 but may have been very much earlier perhaps belonging to his college days. Of Marlowe's translations of *Ovid's Amores* I do not intend speaking here nor am I competent to do so. They are not important also. I do not intend discussing the problem whether *Lochrine*, *Selimus*, or *Arden of Feversham* or any one of these belong to Marlowe. The evidence both internal and external is extremely unreliable. The commentators and critics themselves are not at all certain about their opinions. In this connection Mr. Crawford's article in his *Collectanea* is worth reading.

I propose now in the time available to deal at length with the plays of Marlowe and *Hero and Leander*. At the end I will enumerate certain general features of his work and also mention some limitations of his genius.

*Tamburlaine* the first of the dramas written by him must have been a novelty in its days. We must put ourselves in the year 1587 and make a survey of the then dramatic literature to appreciate fully the contribution of Marlowe. Lyly had already written *Alexander and Campaspe*, *Sapho and Gallatea* and *Endimion*. Peeles *Arraignment of Paris* had appeared a few years before whereas *Gorboduc* of Norton and Sackville had come out as early as 1561. Marlowe's aims in writing this play were twofold. He mentions them in the prologue to Part One:

From jiggling veins of rhyming mother-wits,  
And such conceits as clownage keeps in pay,  
We'll lead you to the stately tent of war,  
Where you shall hear the Scythian Tamburlaine  
Threatening the world with high astounding terms,  
And scourging kingdoms with his conquering sword.

He was going to write in 'high astounding terms' and shun those conceits of the dramatists which he contemptuously terms—clownage. For the first he inaugurated the use of a special kind of blank verse the like of which had never been seen before and which could only be equalled by Shakespeare amongst all his contemporaries and immediate successors. For the second he brought into existence a kind of passionate tragedy which destroyed for ever the mediæval conception of Tragedy that

Of him that stood in great prosperitee  
And is y-fallen out of heigh degree  
Into miserie, and endeth wrecchedly.

His contributions in dramatic art were not so great as his innovations in Blank Verse, the medium he used to clothe his most fantastic flights of imagination. The importance of this contribution will become more apparent if we examine what Ben Jonson aptly called Marlowe's Mighty Line.

Blank Verse in English followed up to a time the Greek standard iambic metre, *i.e.*, it was built up of ten syllables of which every even syllable was accented. There was also a noticeable pause called the *caesura* after the fourth or sixth syllable. This regularity gave rise to a monotony which was palling upon the reader and the hearer. Each line stood alone and was similar to the previous and there was not even the saving feature of a rhyme. Such a line was also prevalent among the Italians who called it *versi sciolti* or verse without rhyme. Previous to this they had the rhymed measure and it was only at the Renaissance when Greek learning flooded the Italian cities that the rhyme was dropped. Thus they brought the poetical vehicle in a line with the Greek models and they might have said like Milton in his introduction to *Samson Agonistes*: 'The measure is Heroic Verse without Rime, as that of Homer in Greek.' But Trissino the founder of Italian Tragedy while writing in *versi sciolti* did not realise the fullest possibilities of Blank Verse when used in drama. Marlowe was the first to do so in modern times.

Surrey was the first Englishman to use Blank Verse. Like all writers of his times he was influenced by the *terza rima* of Dante and the sonnets of Petrarch. The line appealed to him as much as it did to Chaucer. The rejection of rhyme was copied by him and he introduced into the English Language the dry and rigid blank verse line above referred to. This pioneer work was not without followers. Sackville, Norton, Hughes and several others discarded rhymes but unfortunately they did no more. There were no flexibility and no variations in it and it is no small wonder that Gascoigne said: 'Surely I can lament that we are fallen into such a plain and simple manner of writing that there is none other foot used but one . . . if two syllables, whereof the first is depressed or made short, and the second is elevate or made long.' Those who doubt the sleepy monotony of this old Blank Verse have only to read *Gorboduc* on which Sydney has bestowed much undeserved praise.

What Marlowe did was to use the iambic line as a groundwork which he altered from time to time. He put spondees at the end and trochees in the middle in the fourth and sometimes in the second foot. English Language is by no means as regular as are the European Languages. A

quantitative division of the words is impossible. What is lost in quantity is gained in accents. In this connection I wish to read to you a passage from the *Apologie for Poetry* by Sydney. He recognised this fact long before Marlowe, only he did not put it into practice so as to change the nature of Blank Verse which was familiar in his days. He says :

“ Truly, the English, before any other vulgar language I know is fit for both sorts, Ancient and modern versifying: for, for the Ancient, the Italian is so full of Vowels, that it must ever be cumbered with lisens. The Dutch, so of the other side with consonants, that they cannot yeeld the sweet slyding, fit for a Verse : the French, in his whole language, hath not one word, that hath its accent in its last syllable, saving two called antipenultima, and little more hath the Spanish: and therefore, very gracelessly may they use Dactiles. The English is subject to none of these defects.

Nowe, for the rhyme, though we doe not observe quantity, yet wee observe the accent very precisely: which other languages, eyther cannot doe, or will not doe so absolutely. ”

The upshot of this is that the English language is capable of great flexibility due to an accentual scansion which is peculiar to itself. This quality of the language was well exploited in the Blank Verse measure. Once rhyme was dropped the poet could carry on one idea through several lines and could dress up the most rhetorical, the most poetical and the most fanciful ideas.

Aristotle had said ages before that ‘ the iambic is, of all measures, the most colloquial: we see it in the fact that the conversational speech runs into iambic lines more frequently than into any other kind of verse; rarely into hexameters, and only when we drop the colloquial intonation.’ Marlowe at once realised this and used it for rhetorical speeches of the utmost passion. He changed pauses, increased the line to eleven syllables or stopped it short at nine syllables. He sometimes allowed the sense to run into two or three lines forming thereby a rhetorical whole, producing a union out of contrasting and changing lines. Thus he created a thousand measures from a standard line and thus provided a vehicle for the carriage of ideas such as were produced by Milton and Shakespeare.

This is Marlowe’s greatest contribution to drama and poetry in general. His mighty line has since appealed to every one except the German critic Schlegel, who says of Marlowe: “ His verses are flowing but without energy. How Ben Jonson could come to use the expression ‘ Marlowes mighty line ’ is more than I can conceive.” I have nothing to comment upon this remark but that such an able critic as Schlegel should make such a mistake

is more than I can conceive. I must, however, add that though the rhetorical style of Seneca's tragedies influenced Marlowe in no small measure yet our author, we are told, failed to attain the epigrammatic neatness of the Roman dramatist.

*Tamburlaine* was universally admired. The people failed to see the undramatic quality of the piece which is mixture of different kinds of speeches. They liked the 'high astounding terms' and in fact what could be more impressive than the speech of Tamburlaine to the kings of Asia harnessed to his chariot.

Holla, ye pampered jades of Asia !  
 What, can ye draw but twenty miles a-day,  
 And have so proud a chariot at your heels,  
 And such a coachman as great Tamburlaine,  
 But from Asphaltis, where I conquer'd you,  
 To Byron here, where thus I honour you ?  
 .....  
 To make you fierce, and fit my appetite,  
 You shall be fed with flesh as raw as blood,  
 And drink in pails the strongest muscadell :  
 If you can live with it, then live, and draw  
 My chariot swifter than the racking clouds ;  
 If not, then die like beasts, and fit for naught  
 But perches for the black and fatal ravens.  
 Thus I am right the scourge of highest Jove ;  
 By which I hold my name and majesty !

Tamburlaine became a byword in Elizabethan Literature and the style of his utterances formed a model which not a few dramatist strove to imitate. The story of Tamburlaine is a tale of conquests, butcheries and ravishments.

Tamburlaine may be called a forest fire. A forest fire rises in an insignificant spark thrown into some dry grass. The flare increases slowly yet surely. When it increases it also quickens. The tallest tree wilts before its attacks. It rushes forward like inexorable Fate but when it reaches a river it stops. It cannot order Destiny though Destiny ordered it. The sparks from the great fire are blown across but they have not the energy of the blaze on the other side. Such was the rise and fall of Tamburlaine. Tamburlaine was a shepherd but he had the spark of indomitable will in him which ignited a handful of followers. Soon these grew into a powerful marauding band. At the beginning of the story we find him already known as an unconquerable chief, " That robs the merchants of Persepolis, daily committing incivil outrages " and who hopes to reign in Asia. Theridamas a general is sent against him but the forest fire is not to be quenched by any human means. Theridamas quails before Tamburlaine's heat—

His looks do menace heaven and dare the gods ;  
 His fiery eyes are fixed upon the earth,  
 As if he devised some new stratagem,  
 Or meant to pierce Avernus' darksome vaults  
 To pull the triple-headed dog from hell.

He joins himself to Tamburlaine. Turn by turn various monarchs are defeated. No one is powerful enough to stay the all-conquering Tamburlaine. His nature changes. His ambition for conquest of the world—'And we will triumph over all the world'—changes into a thirst for blood. His arrogance increases and his confidence in his powers becomes insolent, 'I hold the Fates bound fast in iron chains'. He turns the Wheel of Fortune with his hands and expects never to be slain or overcome. He crowns his friends and raises himself to the highest pitch of power. He even dares the gods. . . .

Though Mars himself the angry god of arms,  
 And all the earthly potentates conspire  
 To dispossess me of this diadem,  
 Yet will I wear it in despite of them—

He believes himself the scourge of God and the only fear and terror on the world.

He has three colours which he displays to his foe. White, which allows the foe to submit, red which means fight and black by which is understood complete destruction. He himself has passed through all these stages. From white innocence he has become sanguine and now he is absolutely black-hearted. Towns are sacked, people ruthlessly butchered or drowned, countries laid waste only for the love of doing this. Kings form his footstool and kings are harnessed to his chariots. Blood and death are the main themes of his bragging. . . .

" . . . Our swords, our lances, and our shot  
 Fill all the air with fiery meteors ;  
 Then when the sky shall wax as red as blood ;  
 It shall be said I made it red myself,  
 To make me think of naught but blood and war."

He hands the innocent and the guilty alike to his servant Death who sits in scarlet on the 'armed spears' of his horsemen. But the wind which has yet directed his fire turns. Zenocrate, his wife the only creature for whom he perhaps felt any love, dies. He is infuriated yet powerless, . . . .

"What is she dead? Techelles, draw the sword,  
 And would the earth, that it may cleave in twain,  
 And we descend into the infernal vaults,  
 To hale the Fatal Sisters by the hair,  
 And throw them into the triple moat of hell,  
 For taking hence my fair Zenocrate.  
 Casane and Theridamas to Arms!"

His anger avails him nothing. In despair he burns the town and is content:

Boys leave to mourn ; this town shall ever mourn,  
Being burnt to cinders for your mother's death.

He now becomes a brute if he is not one already. He feels the pain neither in others nor in himself. He cuts open his arm to show his courage to his sons. We are not surprised when he slays his own son because he does not partake in his father's bloody revels. Death he thinks is his slave and he means to scourge the pride of such as heaven abhors. The end however is within sight: the fire is drawing to a river and Tamburlaine is drawing to the banks of the Styx. He is beset by disease, though he does not understand what it is.—

What daring god torments my body thus,  
And seeks to conquer mighty Tamburlaine ?  
Shall sickness prove me now to be a man,  
That have been termed the terror of the world ?  
Techelles, and the rest, come, take your swords,  
And threaten him whose hand afflicts my soul :  
Come, let us march against the powers of Heaven,  
And set black streamers in the firmament,  
To signify the slaughter of the gods,  
Ah, friends what shall I do ? I cannot stand.

There is pathos in this last cry of weakness when this great warrior finds that he cannot stand. Death whom he has wearied with the bodies and souls of the slain now comes to bear him away. He sees it advance upon him—

See, where my slave, the ugly monster Death,  
.....  
Stands aiming at me with his murdering dart,  
.....  
.....Techelles, let us march,  
And weary Death with bearing souls to hell.

When the end draws nigh he views mournfully all the lands he has conquered and yet more sorrowfully all that yet remains. He resigns his throne and charges his sons to accomplish what he leaves undone—

Here, lovely boys ; what death forbids my life,  
That let your lives command in spite of death.

He meets his death at last learning, as Edward II did later, that ' death ends all '. His fate is not likely to excite pity for it does not even punish him sufficiently for his numerous sins. It does not even strike terror into the hearts of the reader. His life was a great terror and his death seems a relief. It is a just end to his wicked life.

It is a great question as to how far we must take *Tamburlaine* seriously. How much of it is designed and how much symbolic. This question I leave



unanswered. Though Marlowe's Blank Verse in *Tamburlaine* found many imitators, Tamburlaine as a braggart came in for no little ridicule. I will read to you a few extracts from some writers. Even in 1587 the year of its birth it was attacked as the product of one of the "idiot art masters who intrude themselves to our ears as the alchemists of eloquence, who (mounted on the stage of arrogance) think to outbrave better pens by the swelling bombast of braggard Blank Verse." Swinburne has been even more violent. He speaks of Tamburlaine's speeches thus: The stormy monotony of Titanic truculence which blusters like a simoom through the noisy course of its ten fierce acts. Lamb's remarks on the other hand are incisive in their ridicule but they are interesting. He says: The lines of Tamburlaine are perfect midsummer madness. Nebuchadnezzar's are mere modest pretensions compared with the thundering vaunts of this Scythian shepherd. Till I saw this passage with my own eyes, I never believed that anything more than a pleasant burlesque of mine Ancients was meant but I can assure my readers that it is soberly set down in a play which their ancestors took to be serious. However, in spite of Lamb and others, we still read *Tamburlaine* and with not a little delight. Some passages, e.g., that in which Tamburlaine praises Zenocrate have become classical.

*Tamburlaine* was followed by *Dr. Faustus* which is a much superior play. It has even been called by some as the masterpiece of our dramatist. In all matters where taste comes to the aid of critical judgment we must guard against prejudice and never take for granted what is said by others. *Dr. Faustus* may be a good play, greatly planned as Goethe is reported to have described it, but it lacks a dramatic unity. In this respect it is on a lower level than *Edward II*. It is less passionate than the story of the Scythian Conqueror though not less beautiful. The Blank Verse moves easier than in the previous play but this is more due to practice than anything else. The suggestion that the subject was more congenial to the author I refuse even to consider. Unfortunately there are passages of clownage, the like of which had aroused the contempt of Marlowe himself in the Prologue to *Tamburlaine*.

The story of Faust or Dr. Faustus is very old and forms a legend in Germanic countries. In 1587 it was written by one John Speiss at Frankfurt and in the years following it was reprinted several times. A continuation appeared in the *Wagnerbuch* and also a new version done by Moller at Hamburg. Translations of all these books were available in England in the days of Marlowe. There was besides a ballad relating the tragical life of Dr. Faustus but it was only after the translation of the *Wagnerbuch* that the people of England were in full possession of the legend. Marlowe must

have seen at least two different books on the subject for though he treats as if the Doctor lived at Wurtemberg, yet in the Prologue he names the town of Rhodes as the birth-place of Faustus. This shows at once the sources he must have consulted, for in one German legend the birth-place of the doctor is Rhodes and in the other it is Wurtemberg. These are minute details with which we cannot concern ourselves in this brief paper.

Tamburlaine was a passionate being and so is Dr. Faustus. Unlike Tamburlaine his passion is not for world conquest but knowledge of the occult sciences. In his time he has tried all the branches of knowledge but they have failed to satisfy his curiosity.

Philosophy is odious and obscure ;  
Both law and physic are for petty wits ;  
Divinity is the basest of the three,  
Unpleasant, harsh, contemptible, and vile :  
'Tis magic, magic, that hath ravish'd me.

Magic alone can give him the power and the knowledge he desires. What shall be his programme when once he is master of magic ? This he tells us a few lines above.

How am I glutted with conceit of this !  
Shall I make spirits fetch me what I please,  
Resolve me of all ambiguities,  
Perform what desperate enterprise I will ?  
I will have them fly to India for gold,  
Ransack the ocean for orient pearl.  
And search all corners of the new-found world  
For pleasant fruits and princely delicates ;  
I'll have them read me strange philosophy,  
And tell the secrets of all foreign kings ;  
I'll have them wall all Germany with brass,  
And make swift Rhine circle fair Wertenburg ;  
&c. . . . .

He forthwith learns magic and is able to raise Mephistophiles with whom he enters into a compact to sell his soul to the Devil. He is not afraid of hell and even advises Mephistophiles to learn fortitude from Faustus.

*Faust.* Where are you damned ?

*Meph.* In hell.

*Faust.* How comes it, then, that thou art out of hell ?

*Meph.* Why this is hell, nor am I out of it.

Think'st thou that I, who saw the face of God,  
And tasted the eternal joys of heaven,  
Am not tormented with ten thousand hells,  
In being deprived of everlasting bliss ?  
O, Faustus, leave these frivolous demands,  
Which strike a terror to my fainting soul !

*Faust.* What is great Mephistophiles so passionate  
For being deprived of the joys of heaven ?  
Learn thou of Faustus manly fortitude,  
And scorn these joys thou never shalt possess  
Go bear these tidings to great Lucifer :

\* \* \* \* \*

Say, he surrenders up to him his soul,  
So he will spare him four and twenty years,  
Letting him live in all voluptuousness ;

He is tormented by doubts and fears whether he has made a good bargain. The good and the bad angels pull him to their side. His vaunt that had he ten thousand souls, he would give them all to Mephistophiles is turned to humbleness. In a pathetic passage which is reminiscent of Spenser's Cave of Despair, he lays bare his soul :

*Faust.* My heart's so hardened, I cannot repent :  
Scarce can I name salvation, faith or heaven,  
But fearful echoes thunder in my ears,  
" Faustus, thou art damn'd ! then swords, and knives,  
Poison, guns, halters, and envenom'd steel  
Are laid before me to despatch myself ;  
And long ere this I should have slain myself,  
Had not sweet pleasure conquered deep despair.  
Have I not made blind Homer sing to me,  
Of Alexander's love and Oenon's death ?  
And hath not he, that built the walls of Thebes  
With ravishing sound of his melodious harp,  
Made music with my Mephistophiles ?  
Why should I die, then, or basely despair ;  
I am resolv'd ; Faustus shall ne'er repent.—

After this appear Lucifer and Beelzebub who entertain Faustus by showing him the Seven Deadly Sins where with all Mediæval writers chose to frighten the erring multitude. This sight fortifies our hero. He goes to the Vatican and torments the Pope and the Cardinals. He tricks even poor ostlers and vintners and calls up from Hell the images of Alexander and his paramour. Tired of all this trumpery he is intent upon relenting but Mephistophiles and his colleagues threaten him with tortures and he submits. As a last item in his list of demands he asks for a sight of Helen of Troy and desires her to be his sweetheart. In a passage of extreme beauty and voluptuousness which is unequalled by any but the second sestiad of *Hero and Leander* he makes love to Helen. I quote the passage in full :

*Faust.* Was this the face that launched a thousand ships,  
And burnt the topless towers of Ilium ?—  
Sweet Helen, make me immortal with a kiss.—

*Kisses her.*

Her lips suck forth my soul : see where it flies !—  
Come, Helen, come, give me my soul again.

Here will I dwell, for heaven is in these lips,  
And all is dross that is not Helena.  
I will be Paris and for love of thee,  
Instead of Troy shall Wertenburg be sack'd ;  
And I will combat with weak Menelaus,  
And wear thy colours on my plumed crest ;  
Yes I will wound Achilles in the heel,  
And then return to Helen for a kiss.  
O, thou art fairer than the evening air,  
Clad in the beauty of a thousand stars ;  
Brighter art thou than flaming Jupiter  
When he appeared to hapless Semele ;  
More lovely than the monarch of the sky  
In wanton Arethusa's azur'd arms ;  
And none but thou shalt be my paramour !

All this magic now comes to an end. Twenty-four years have passed away. Faustus has but one bare hour to live after which he is to be damned for ever. The passages in which this condemned soul awaits its eternal perdition are excellent but I am sorry I cannot quote them here for want of time. I recommend those of you who have not yet read them to do so at their earliest. Twelve o'clock strikes and with thunder and lightning the devil and his crew enter and take Faustus' soul to eternal misery. Such is the story of *Dr. Faustus*. A comparison between *Dr. Faustus* and Goethe's *Faust* and Gounod's opera *Faust* is inevitable though there is very little common between the first and the other two. Though the figure of Faust is common to the plays the story itself is entirely different. Goethe's *Faust* is divided into two parts and it is only in Act I of Part One that there is any resemblance. Goethe's Part One is devoted to the seduction of Margarita by Faust. In Part Two Faust is made to see sights besides which Helen of Troy in *Dr. Faustus* is but a solitary figure. Goethe's play is more philosophical and more fanciful. One can but smile at the explosions of Lamb when he compared the two plays. He says: "The German *Faust* is a disagreeable canting tale of seduction, which has nothing to do with the spirit of Faustus-Curiosity. Was the dark secret to be explored to end in the seducing of a weak girl, which might have been accomplished by earthly agency? When Marlowe gives his mistress, he flies him at Helen, flower of Greece, to be sure, and not Miss Betsy, or Miss Sally Thoughtless." We can pardon this misplaced enthusiasm in Lamb on two grounds. Firstly he had only read the first part of *Faust* and did not know that Helen of Troy was going to figure in Goethe's *Faust* too, and, secondly because he was an Englishman. A last point I wish to mention about *Dr. Faustus* for the sake of students present here is that *Dr. Faustus* is the first play in which there is an inner struggle in the soul of the hero. Those who know Hegel's theory of conflict in Tragedy will realise the importance of this remark. It was perhaps from this hint that

Shakespeare produced his famous tragedies in which the conflict in the soul of man is the pre-eminent thing.

The next play which Marlowe composed was the *Jew of Malta*. The Jew in drama has evoked many subtle fancies. The story of a Jew in drama must always be considered in connection with Jewish History. During the Middle Ages the people in Europe were suffering from a 'jewishphobia' very similar to that in Germany, and not a few members of this wandering tribe of Israel met a dreadful fate. They were made to wear a yellow cap as a badge to distinguish them from Christians. You perhaps remember the line spoken by Shylock : *For sufferance is the badge of our tribe*. Kings and nobles encouraged Jews to settle in their realms and grow rich and then in their turn they robbed them of their wealth. King John is reported to have got hold of a Jew from whose head he used to pluck out a tooth every day till the Jew confessed, where his money was hid. This background must be borne in mind if you desire to understand the subject of the Jew in Elizabethan Drama. We must not also forget that the attitude towards the Jews has since changed and the Jew though still a little degraded, has come to find a better social standing than his forefathers in the Middle Ages. We find thus a Jew in the Loyalties of Galsworthy depicted in a way which would have been impossible only a few decades ago.

Marlowe's was the first treatment of a Jew as the hero of a play. Shakespeare's Shylock is perhaps the second. Comparisons with the latter are inevitable and Barrabas is found to be a meaner and a lesser figure. But what Barrabas loses in this regard is to a certain extent regained by him in the fact that Barrabas too obviously served as a model to Shakespeare. Innumerable similarities can be found in the two plays and Shakespeare's debt to senior dramatist must be immense. Of these similarities a list has been drawn by Sir A. W. Ward but that too is by no means exhaustive. In a word Shakespeare's Jew is more sublime. He rises even to tragic dimensions. He is the epitome of the sufferings of the Jews at the hands of the Gentiles and the spirit of revenge which inspires them. Shylock's revenge is dignified. He wants the law and forces a bond which though given in merry sport is nonetheless binding. His hate is against the Christians who scorn his worthy nation. He wants to vindicate the rights of the God's chosen people. He is foiled and defeated by a mere trick, a play upon words. In his defeat he is noble. He goes off the stage silent and in a dignified manner: "Send me the deed and I will sign it," says he.

Barrabas on the other hand is mean and a villain. He is a Machiavellian who has no scruples or morals. He is introduced to the audience in very significant words :

## We peruse

The story of a rich and famous Jew  
 Who liv'd in Malta : You shall find him still,  
 In all his projects, a sound Machiavill ;  
 And that's his character.

The Jew lives up to this reputation given him. He is not ashamed of his villainy but says :

As for myself, I walk abroad o' nights,  
 And kill sick people groaning under walls :  
 Sometimes I go about and poison wells :  
 And now and then to cherish Christian thieves,  
 I am content to lose some of my crowns,  
 That I may walking in my gallery,  
 See 'em go pinioned along by my door.  
 To practise first upon the Italian ;  
 There I enrich'd the priests with burials,  
 And always kept the sexton's arms in ure  
 With digging graves and ringing dead men's knells :  
 And, after that, was an engineer,  
 And in the wars 'twixt France and Germany,  
 Under pretence of helping Charles the fifth,  
 Slew friends and enemy with my stratagems :  
 Then, after that, was I an usurer,  
 And with extorting, cozening forfeiting  
 And tricks belonging unto brokery,  
 I fill'd the gaols with bankrupts in a year  
 And with young orphans planted hospitals ;  
 And every moon some or other mad.  
 And now and then one hang himself for grief,  
 Pinning upon his breast a long great scroll  
 How I with interest tormented him.  
 But mark how I am blest for plaguing them ;—  
 I have as much coin as will buy the town.

His activities in the play cause a great loss of life. He gets two young men to fight and kill each other. One of them is the lover of his daughter and is in turn loved by her. When his daughter Abigail turns Christian he poisons her along with the entire nunnery. He slays two friars and then some conspirators who wish to betray him. He delivers Malta to the Turks and wants to kill both the Turks and the Christians when he meets an awful death by burning.... a death he had designed for others.

The importance of this play lies only in the hints which Shakespeare got for his *Merchant of Venice*. There are also some soliloquies in which Barrabas is the personified figure of avarice. Not Mammon himself could be better depicted. It has been well observed by many critics that the play must have been finished in a hurry. That Marlowe designed a different Jew but changed the character as he proceeded is perhaps true, for the opening

acts are more elevated than the end. The play on the whole ranks below even *Tamburlaine* for it lacks its poetry. It is perhaps more entertaining for it is in some respects farcical. The Jew himself was designed to be a comic figure. Edward Alleyn we are told by Heywood made a great name as the Jew and he used to wear a false nose to answer the many references to the ugly nose of Barrabas in the play. In the days when Jew baiting was common and the death of a Jew was not more painful to the public than the lynching of a negro to the Southern States of the United States, I doubt if the play can rightly be called a Tragedy.

The Tragedy of *Edward II* was the last play Marlowe wrote. Taken as a Historical play it falls short of Shakespeare's best efforts. It is loosely strung together though in dramatic art it marks an advance upon the other plays of Marlowe. The characters of Edward II, Gaveston and Mortimer the Younger are very pronounced and more elaborate than any which have gone before barring only Dr. Faustus. The king in the story angers the nobles by his fondness for Gaveston, a favourite, and the nobles kill Gaveston. The king thereupon takes revenge but at the end he is forced to abdicate and is later slain. The beauty of the piece lies in its delineation of the character of Edward II. Whether the king is a study in homosexuality is a question which it would not do to study here. There is ample evidence that it is. The last act of the play is touching beyond words. Lamb says: "The reluctant pangs of abdicating royalty in Edward furnished hints, which Shakespeare scarcely improved in his *Richard the Second*, and the death scene of Marlowe's king moves pity and terror beyond any scene ancient or modern with which I am acquainted."

Had I the time I would have shown to you the influence of Marlowe on later drama especially in the character of the Villain in the piece—an influence which lasted to the days of Ford and Webster. We cannot, however, fail to notice the similarity between Edward II and Richard II. You remember the words of Lamb which I read to you just now. Sir Sydney Lee goes further and says: "Shakespeare's piece stands to that of Marlowe in much the relation of son to father." I will go even further and say that the influence of Marlowe's play did not stop with *Richard II*. The Younger Mortimer served Shakespeare for the portrait of Henry Hotspur in *1 Henry IV* and perhaps the bastard in *King John*. Shakespeare's claim to the creation of a new *genre* in dramatic literature by writing *Histories* belongs as much to him as Marlowe.

About the rest of the plays such as the *Massacre at Paris*, and *Dido of Carthage* I am going to say but little. In the *Massacre at Paris* the character of Guise is very important and he stands besides the leading characters in

the previous plays. He has some astounding speeches which unfortunately we have no time to repeat here. On the whole the play is worth a perusal. It is one of the most brutal plays I have read and contains murders, assassinations and massacres second to none in the whole range of Elizabethan drama.

The other play *Dido of Carthage* is based on the *Aeneid* of Virgil which must have been familiar to Marlowe when he was at Cambridge. Different writers had also retold the story. We are informed that Alessandro Pazzi dramatised it and it was printed about the year 1524 and later on it was again treated by Giraldo Cinthio and Dolce in Italy and Jodelle in France. Marlowe may have seen one or more of these. His classical education is evident in this play. The play is led on to a single climax after which there is a *denouement*. Hermes is a tolerable *deus ex machina* in the Euripidian manner. Dido is the only full length portrait of a woman painted by Marlowe. She lacks in definition and individuality such as Shakespeare gave to his female characters. Nevertheless Shakespeare took a few hints from the play which he has utilised in his *Merchant of Venice* especially in the speeches uttered by Portia. The play was half finished by Marlowe and it was completed and patched up by Nash. We do not know precisely the contribution of Nash and I hope some one amongst you will devote a little time trying to separate the work of the two writers.

There are two other things besides the plays written by Marlowe. They are the story of *Hero and Leander* in rhyming couplets and the poem called *The Passionate Shepherd to his Love*. The latter is familiar to every reader of English Literature and need not be read here. *Hero and Leander* again was a fragment at Marlowe's death: only the first two sestiams being written by him. It was later finished by Chapman. The poem or rather the two sestiams were written by Marlowe under the influence (as I suspect) of Chaucer's *Troilus and Cresseide*, and are the most voluptuous poems of their kind. This poem contains a line quoted by Shakespeare in very respectful terms in *As You Like It*. Shakespeare it seems was a perfect pupil of Marlowe for he has used the poem as a model too. Numerous are the similarities between this poem on the one hand and *Venus and Adonis* and *Lucrece* of Shakespeare on the other. I am very sorry that I cannot deal with them here for want of time. I will however mention the points one must consider in connection with this poem. They are its versification, and its influence on Shakespeare and Keats. These are things any careful student will see for himself.

We have now come to the end of our detailed account of the works of Marlowe. Let us now briefly review his special merits and limitations.



Marlowe introduced into his actions a broad unity of action derived from the presence of a single important figure. These figures are passionate beings who are striving after something which they fail to attain. Symmonds calls this *L'amour de L'impossible*, the love of the impossible. In *Tamburlaine* it is world conquest, in *Dr. Faustus* it is love of knowledge and power, in *Barrabas* lust for gold and so on. These characters fail in their aims. Their tragedy lies in this failure and is not due to any flaw of character of *hamartiae*. Shakespeare worked on a contrary system and avoided this cult of passion except in his *Richard III* in which he was obviously following *Tamburlaine*. Shakespeare has clearly followed the Aristotelian doctrine of a flaw in character of the hero.

Marlowe's contribution to dramatic art, is the creation of an episodic plot developing in relation to a great personality who nevertheless is doomed to failure. In doing this Marlowe was following the crude example of the chronicle plays and improving upon them. The chronical plays did not possess a great personality as Marlowe's plays did. This was the advance introduced by him.

Of Marlowe's limitations I shall say very little. They have been very well set forth by Prof. Allardyce Nicholls. They are the episodic nature of his dramas, absence of subordinate characters, lack of women characters, lack of comic spirit, inauguration of an inhuman drama, and use of hyperbole. We have just now seen that Marlowe always concentrated his attention on one protagonist in the play. There was no room in his plays for lesser figures who should also be important. In all Shakespeare's plays there are at least two figures or even more who continuously attract the attention of the reader. This is very much of an advantage. Marlowe in eschewing this avoided that conflict which is one of the chiefest ingredients of a play.

As regards lack of women characters we can say that in that society there was no room for women. Women were beginning to assert themselves and were to find a better place in the hands of the successors of Marlowe. Marlowe's women are shallow and selfish and have no great attractions. Dido is perhaps the best portrait in the whole gallery but she too is not very well drawn. Again in Marlowe though we find a great deal of clownage there is little true humour such as we find in Shakespeare or even Webster. Marlowe may have effected this had he lived longer but unfortunately we can only speak of what he did and not of what he could have done.

I will now end this paper with a quotation from *L'Histoire de la Littérature Anglaise* of M. Jusserand. I have very great respect for him especially for his books on English Literature of the Middle Ages. M. Jusserand, a great

scholar, was the first to make a systematic study of Pre-Elizabethan drama as all who have read his *Le Théâtre en Angleterre* are aware. His description of Marlowe's achievements is about the truest I can find. He says: Celui-là (i.e. Marlowe) Celui-là est un vrai poète, mais tout aussi décousu et aussi enfantin que les autres. Son « Tamburlaine » son « Docteur Faust » son « Juif de Malte » sont des drames parsemés de scènes ridicules, de vantardises grotesques, de crimes impossibles, de puérilités de toutes sortes, mais où tout à coup étincellent, brillants comme des météores à travers la nuit, des passages d'une incomparable splendeur, chargés de poésie, et vibrant de passion.

## THE INFLUENCE OF THE ROYAL SOCIETY ON ENGLISH PROSE STYLE IN THE SEVENTEENTH CENTURY

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ONE of the most significant achievements of the seventeenth century was the creation of a prose style, essentially the same as that of today. Caroline prose, the prose of Milton and Sir Thomas Browne, had produced some of the finest passages in English literature—passages that will endure with the English language. But the Restoration saw the birth of a new prose style, a style whose distinguishing marks were simplicity, precision and lucidity. Milton's 'sonorous metal blowing martial sound' gave place to Dryden's work-a-day prose. All that happened on one side of the dividing line has the flavour of the antique; all that happened on the other side is absolutely modern. To the old way of expression belong Burton, Browne, Milton, Taylor and Clarendon—to the new, Dryden, Halifax, Temple and Sprat. In point of time, these groups may sometimes overlap; but in character, they might be separated by centuries. The first belong to the past, the second to the present.

Minto, in his *Manual of English Prose Literature*, makes a distinction between the intellectual and the emotional qualities of style. According to him, the notable intellectual qualities of style are simplicity and clearness, while the chief among the emotional qualities are strength and elaboration. This is a very significant line of demarcation. With this distinction in mind, let us take a look at some of the great masters of prose style in the pre-Restoration period.

Sir Thomas Browne (1605–1682) published the *Hydriotaphia or Urn Burial* in 1658. The following quotation from that book illustrates the characteristic features of Browne's prose style :—"And therefore, restless inquietude for the diuturnity of our memories unto present considerations seems a vanity almost out of date, and superannuated piece of folly. We cannot hope to live so long in our names, as some have done in their persons. One face of Janus holds no proportion unto the other. 'Tis too late to be ambitious. The great mutations of the world are acted, or time may be too short for our designs. To extend our memories by monuments, whose death we daily pray for, and whose duration we cannot hope,

without injury to our expectations in the advent of the last day, were a contradiction to our beliefs. We, whose generations are ordained in this setting part of time, are providentially taken off from such imaginations ; and, being necessitated to eye the remaining particle of futurity, are naturally constituted unto thoughts of the next world, and cannot excusably decline the consideration of that duration, which maketh pyramids pillars of snow, and all that's past a moment." <sup>1</sup> This is a fair example of Browne's style. It is by no means an extreme passage. It is clear from the above quotation that the dominant characteristics of Browne's style are quiet elaboration, and a feeling of vigour, with an occasional flight of elevation.

John Milton (1608-1674) published his one enduring prose work, *The Areopagitica*, in 1644. Here is a passage from that book:—"And lest some should persuade ye, lords and commons, that these arguments of learned men's discouragement at this your order are mere flourishes, and not real, I could recount what I have seen and heard in other countries, where this kind of inquisition tyrannises, when I have set among their learned men (for that honour I had), and been counted happy to be born in such a place of philosophic freedom, as they supposed England was, while themselves did nothing but bemoan the servile condition into which learning amongst them was brought ; that this was it which had damped the glory of Italian wits ; that nothing had been there written now these many years but flattery and fustian." <sup>2</sup> This is the typical Milton prose, and a fine example of elaborate poetical prose. It is powerful, and 'yields in the highest degree the pleasure of luxurious expression'. <sup>3</sup>

Jeremy Taylor (1613-1667) wrote his *Holy Living* during his virtual exile in Wales from 1643 to 1654. The following is a fair specimen of his prose, and exemplifies the essential characteristics of his style:—"We are in the world like men playing at tables ; the chance is not in our power, but to play it is ; and when it is fallen we must manage it as we can ; and let nothing trouble us, but when we do a base action, or speak like a fool, or think wickedly ; these things God hath put into our powers ; but concerning those things which are wholly in the choice of another, they cannot fall under our deliberation, and therefore neither are they fit for our passions. My fear may make me miserable, but it cannot prevent what another hath in his power and purpose ; and prosperities can only be enjoyed by them who fear not at all to lose them ; since the amazement and passion concerning

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<sup>1</sup> Craik, Henry, *English Prose Selections*, II, 330.

<sup>2</sup> Craik, Henry, *Ibid.*, II, 473.

<sup>3</sup> Minto, William, *Manual of English Prose Literature*. 358.

the future takes off all the pleasure of the present possession."<sup>4</sup> Taylor uses more familiar language than either Milton or Sir Thomas Browne. But his 'prodigal profusion' and 'opulence of words' enable us to date him. He too has the characteristic features of the emotional style—strength and elaboration. Thus all the three writers we have considered show a preponderance of the emotional qualities of prose style.

Now let us turn to some of the great masters of English prose style in the Restoration period.

John Dryden (1631–1700) published his famous *Essay of Dramatic Poesy* in 1668. The following quotation from that critical work illustrates the chief features of Dryden's prose style :—"To begin then with Shakespeare. He was the man who of all modern and perhaps ancient poets had the largest and the most comprehensive soul. All the images of nature were still present to him, and he drew them not laboriously but luckily; when he describes anything you more than see it, you feel it too. Those who accuse him to have wanted learning, give him the greater commendation; he was naturally learned; he needed not the spectacles of books to read nature; he looked inwards, and found her there."<sup>5</sup> Dryden's prose style is clear, familiar, and occasionally epigrammatic.

Halifax—George Savile, Marquis of Halifax—(1633–1695) wrote several short treatises that show him to have been a master of the familiar prose style of the Restoration period. The following is a quotation from his *A Character of King Charles II* :—"A prince neither sharpened by his misfortunes while abroad, nor of his power when restored, is such a shining character, that it is a reproach not to be dazzled with it, as not to be able to see a fault in its full light. It would be a scandal in this case to have an exact memory. And if all, who are akin to his vices, should mourn for him, never prince would be better attended to his grave. He is under the protection of common frailty, that must engage men for their own sakes not to be too severe, where they themselves have so much to answer."<sup>6</sup> This passage reveals the fact that Halifax was a master of the best English of his time—the easy and familiar prose style.

John Tillotson (1630–1694) provides another example of the simple and felicitous style that came into being in the third quarter of the seventeenth century. The following is a quotation from his sermon, entitled *Good Men Strangers and Sojourners upon Earth* :—"If we have a plentiful fortune,

<sup>4</sup> Craik, Henry, *English Prose Selections*, II, 536.

<sup>5</sup> *Ibid.*, III, 152.

<sup>6</sup> *Ibid.*, III, 216.

we are apt to abuse it to intemperance and luxury; and this naturally breeds bodily pains and diseases, which take away all the comfort and enjoyment of a great estate. If we have health, it may be we are afflicted with losses, or deprived of friends, or cross'd in our interests and designs, and one thing or other happens to impede or interrupt the contentment and happiness of our lives. Sometimes an unexpected storm, or some other sudden calamity, sweepeth away, in an instant, all that which with so much industry and care we have been gathering many years. Or if an estate stand firm, our children are taken away, to whose comfort and advantage all the pains and endeavours of our lives were devoted. Or if none of these happen (as it is very rare to escape most, or some of them), yet for a demonstration to us that God intended this world to be uneasy, to convince us that a perfect state of happiness is not to be had here below, we often see in experience, that those who seem to be in a condition, as happy as this world can put them into, by the greatest accommodations towards it, are yet as far or farther from happiness, as those who are destitute of most of those things wherein the greatest felicity of this world is thought to consist.”<sup>7</sup>

Thomas Sprat (1636–1713) is another master of the new prose style. Clearness of manner and coolness of judgment are the distinctive qualities of all his writings. His observations on *Monsieur de Sorbière's Voyage into England* is one of the least important of his works. But even here, one can see the characteristics of Sprat's prose style:—“Concerning the English eloquence, he bravely declares, that all their sermons in the pulpit, and pleadings at the bar, consist of nothing but mean pedantry. The censure is bold, especially from a man that was so far from understanding our language, that he scarce knew whether we move our lips when we speak. But to show him, that we can better judge of Monsieur de Sorbière's eloquence, I must tell him that the Muses and Parnassus are almost whipped out of our very schools; that there are many hundreds of lawyers and preachers in England, who have long known how to condemn such delicacies of his style.”<sup>8</sup>

The distinctive intellectual qualities of style—simplicity and clearness—are common to all the four writers we have considered here. In fact, one is justified in saying that the pre-Restoration writers, as a rule, show a preponderance of the emotional qualities of style, while the great achievement of the Restoration writers is in the intellectual qualities of their prose style. This transition from the flights, conceits and long-winded constructions of

<sup>7</sup> Craik, Henry, *English Prose Selections*, III, p. 135.

<sup>8</sup> *Ibid.*, III, p. 274.

Browne and Milton to the clear and concise style of Dryden, Halifax and Sprat is one of the greatest literary achievements of the third quarter of the seventeenth century. This change was the result of a multiplicity of causes. But in this paper, we are concerned only with one of these, namely the growing interest in Science, especially the influence of the then newly founded Royal Society.

John Dryden is generally considered to have inaugurated modern English prose. But when we realize that Thomas Sprat's *History of the Royal Society* was published before Dryden's *Essay of Dramatic Poesy*, it may well be urged that Sprat deserves a share in the credit so commonly attributed to Dryden alone. In fact Thomas Sprat himself was, in many ways, only the mouth-piece of the Royal Society, and as such the *History of the Royal Society* is one of the most important documents of the seventeenth century, containing as it does the views of the whole body of Baconians.

The great change which came into English prose style after the Restoration of 1660 has already been fully illustrated. The Elizabethan age<sup>9</sup> was essentially an age of poetry. The great writers of the age appealed to the imagination and the emotions, rather than to reason. This is true of the prose as well as of the poetry of this period. And so it is that in the writings of Milton, Browne, and even of Jeremy Taylor, we get a preponderance of the emotional qualities of prose style—strength and elaboration.

The Restoration writers, on the other hand, appealed to reason rather than to imagination and the emotions. And therefore in their writings, we get the intellectual qualities of style clearly shining out. The connection between the intellect and science is obvious. Emotion has no place in scientific studies. Therefore the preponderance of the intellectual qualities of prose style in the Restoration period may be traced back to the influence of science. However, it may be urged that the mood of the second half of the seventeenth century was worldly and practical, and that both the work-a-day prose style and the scientific studies were two independent results of the self-same mood. But a careful investigation of the matter would reveal the fact that the interest in Science took precedence over the creation of an everyday prose style. In fact, some of the seventeenth century writers, like Abraham Cowley and Joseph Glanvill, showed remarkable change in their prose style, after they came under the influence of the Royal Society. And hence the claim that the then new science, particularly the Royal

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<sup>9</sup> The term, Elizabethan age, is used in the wider sense, to include the Jacobean and Caroline ages.

Society, deserves a share of the credit, for having brought into being a simple, concise and clear prose style.

A recognition of the need for a direct manner of expression was a characteristic feature of the new scientific movement. As early as 1648, William Petty,<sup>10</sup> in communicating some matters of scientific interest to Samuel Hartlib, says:—"I shall desire you to show them unto no more than needs you must, since they can please only those few that are real friends to the design of realities, not those who are tickled only with rhetorical prefaces, transitions and epilogues, and charmed with fine allusions and metaphor."<sup>11</sup>

Petty thus makes style a distinguishing mark between the experimental philosophers and those who held to the old tradition. R. F. Jones, in an article entitled *Science and English Prose Style*,<sup>12</sup> points out how in Hobbes' *Leviathan*, published in 1651, and in Robert Boyle's *Some Considerations Touching the Style of the Holy Scriptures*, written about 1653, though not published until 1663, we get the same opposition to rhetorical ornament. This tendency acquires its full momentum in Sprat. In a famous passage in the *History of the Royal Society*, the author makes clear the Society's intense opposition to rhetorical prose. "But lastly, in these, and all other businesses, that have come under their care, there is one thing more, about which the Society has been most solicitous; and that is, the manner of their discourse; which, unless they had been very watchful to keep in due temper, the whole spirit and vigour of their *Design*, had been soon eaten out, by the luxury and redundance of *Speech*. The ill-effects of this superfluity of talking, have already overwhelmed most other Arts and Professions; in so much, . . . that I can hardly forbear recanting what I said before; and concluding, that eloquence ought to be banished out of Civil societies."<sup>13</sup>

He then describes the style required by the Royal Society, of all papers presented to it:—"They have therefore been most rigorous in putting in execution, the only Remedy, that can be found for this *extravagance*; and that has been, a constant Resolution, to reject all the amplifications, digressions, and swellings of style; to return back to the primitive purity and shortness, when men delivered so many things, almost in an equal number of *words*. They have exacted from all their members, a close, naked natural way of speaking, positive expressions; clear senses; a native

<sup>10</sup> Sir William Petty was appointed Professor of Anatomy at Oxford in 1651.

<sup>11</sup> Petty, William, "Advice to Hartlib," *Harleian Miscellany*, VI, p. 142.

<sup>12</sup> Jones, R. F. "Science and English Prose Style," *P.M.L.A.*, XLV, 1930, p. 981.

<sup>13</sup> Sprat, Thomas, *History of the Royal Society*, pp. 111-12.



easiness; bringing all things as near the mathematical plainness, as they can; and preferring the language of artizans, countrymen, and merchants, before that of Wits or Scholars."<sup>14</sup> This passage shows the degree of interest the Scientists had in the problem of expression. In fact they considered a reformation in methods of expression essential to progress in scientific investigation. They knew that in order to accomplish their design in the realm of science, they had "to separate the knowledge of nature from the Colours of Rhetoric, the devices of Fancy, or the delightful deceit of Fables."<sup>15</sup> Thus with the majority of scientists, this interest in expression was only a means to an end. But in Sprat, it became an end itself. In his *History of the Royal Society*, he put forward a proposal for erecting an English Academy. There he says that it was just the right time to bring the language to perfection. Till the time of Henry VIII, no one was interested in the betterment of the English language, except Chaucer. From that time down to the civil wars, it was 'still fashioning and beautifying itself'. The wars and religious controversies which followed led to the use of all sorts of outlandish and inelegant words and expressions. But now that they had settled down to a peaceful life, he thought that the time was ripe for an attempt to purify the language.

In the light of such a piece of evidence to prove Sprat's interest in the improvement of the language, I do not know how Sonnichsen of Harvard University can claim that "he (Sprat) was really a prophet unawares, and aimed his suggestions mostly at the discussions of scientific and learned bodies—not at the practices of prose writing in general."<sup>16</sup> In fact, Sonnichsen was only echoing Saintsbury, who maintained that Sprat advocated a 'naked natural style of writing' only for the improvement of science, and not of literature. But this does not seem to be a tenable position. The very fact that he advocated the establishment of an English Academy, which was to "set a mark on the ill words; correct those which are to be retained, admit, and establish the good; and make some amendations in the accent and grammar,"<sup>17</sup> shows very clearly that he was concerned about a reformation in current methods of expression, even apart from its necessity in the pursuit of science.

This suggestion of an English Academy was in the air ever since the beginning of the seventeenth century. Both in Italy and in France, the language had been entrusted to an Academy for the purpose of standardizing, refining and fixing it. England had long looked to France and Italy for guidance,

<sup>14</sup> Sprat, Thomas, *History of the Royal Society*, p. 113.

<sup>15</sup> *Ibid.*, pp. 61-62.

<sup>16</sup> Sonnichsen, C. L., "Thomas Sprat," *Harvard Ph.D. Theses*, 1931, 247.

<sup>17</sup> Sprat, Thomas, *History of the Royal Society*, p. 42.

and therefore the example of the French and Italian Academies began to attract attention in England. With the Restoration, discussions regarding the establishment of an English Academy became more frequent. In 1660, there appeared the *New Atlantis . . . continued by R. H. Esquire*. The author R.H. is probably Robert Hooke. In this work, the author suggested, as an additional feature of Bacon's ideal Commonwealth, the establishment of an Academy "to purify our native language from barbarism or solecism, to the height of eloquence, by regulating the terms and phrases thereof into constant use of the most significant words, proverbs, and phrases, and justly appropriating them either to the lofty, mean or comic style."<sup>18</sup> In 1664, Dryden, in the dedication of the *Rival Ladies*, regretted the fact that there was no English Academy. The same year the attention of the Royal Society was drawn towards this matter, and it adopted a resolution to the effect that as "there were persons of the society whose genius was very proper and inclined to improve the English tongue, particularly for philosophic purposes, it was voted that there should be a Committee for improving the English language."<sup>19</sup> Thomas Sprat was one of the members of this Committee, and as such one can safely conclude that Sprat's interest in linguistic matters was vital and not merely incidental. He advocated a 'naked natural style of writing' not only for the improvement of science but also of literature. He was not a prophet unawares. He knew exactly what he was bargaining for.

Even more significant than all this is his contention that the study of Science would open up new avenues, from which Wit will be able to draw its images. "There is in the *Works of Nature* an inexhaustible treasure of *Fancy* and *Invention*, which will be revealed proportionately to the increase of their knowledge. . . . The *Wit* of the *Fables* and *Religions* of the ancient world is well-nigh consumed. They have already served the poets long enough; and it is now high time to dismiss them, especially seeing they have this peculiar *imperfection*, that they were only *Fictions* first; whereas *Truth* is never so well expressed or amplified as by those ornaments which are true and real in themselves. . . . It is now therefore resonable for *Natural knowledge* to come forth, and to give us the understanding of new *Virtues* and *Qualities* of things."<sup>20</sup>

This is a very significant passage, and no literary critic has, up till now (as far as I know), pointed out its full significance. In order to recognize the importance of this passage, one has to realize the change in spiritual conceptions and material circumstances which came with marked emphasis at the

<sup>18</sup> Baugh, Albert C., *History of the English Language*, p. 326.

<sup>19</sup> *Ibid.*, p. 326.

<sup>20</sup> Sprat, Thomas, *History of the Royal Society*, pp. 413-16.

beginning of the seventeenth century. With the anatomy of the world presented by science, the old fables and mythologies, and even images, which the Elizabethan poets had used, seemed unacceptable. John Donne's dismissal of all myth from his poetry provides an excellent example of this change which came into being in the seventeenth century. Donne accepted the challenge that Bacon had set down namely that poetry dealt only with a world of shadows. Cowley also rejected mythology and retained religion as a poetic theme. Davenant too felt that the older mythology could no longer serve as a basis for poetry in a world of science and reason. In the absence of a suitable mythology, Donne and Cowley took refuge in religion. Sprat also recognized the inadequacy of the fables and religions of the ancient world. But to him, the place of mythology is not to be taken up by religion but by the hitherto unknown Virtues and Qualities of things, which the pursuit of Science would reveal to the world. In a poem such as James Thomson's *To the Memory of Sir Isaac Newton*, we have the fulfilment of Sprat's anticipations. Just a few lines from that poem are quoted below :—

All-intellectual eye, our solar round  
First gazing through, he by the blended power  
Of *gravitation* and *projection* saw  
The whole in silent harmony revolve.<sup>21</sup>

Again, in the same poem, he writes :—

The heavens are all his own ; from the wild rule  
Of whirling *vortices* and circling *spheres*,  
To their first great simplicity restored.<sup>22</sup>

Gravitation and the refractive law have taken the place of Greek and Roman mythologies. The study of science has at last opened up new avenues from which Wit has drawn its images. Obviously Sprat's interest in literature was not incidental. The same was true of several other members of the Royal Society, particularly of an influential group including Dryden, Evelyn and Waller.

It may be useful to ask whether this view advocated by Sprat and the Royal Society had any appreciable influence on the writings of that period. R. F. Jones, in the article already referred to, says that we have two examples of men whose style was radically changed as a result of the influence of the Royal Society. Joseph Glanvill published, in 1661, his *Vanity of Dogmatizing*—a book written in an ornate and highly rhetorical style. In 1664, he published a second edition of this entitled *Scepsis Scientifica*. A number of changes were introduced into this, but very few as far

<sup>21</sup> Thomson, James, *Poetical Works*, p. 334.

<sup>22</sup> *Ibid.*, p. 335.

as the style was concerned. In 1676, he published a third abbreviated edition of the same as the first of seven essays in a volume with the title, *Essays on Several Important Subjects in Philosophy and Religion*. This shows the remarkable change that his association with the Royal Society has brought about in his style. In the *Vanity of Dogmatizing*, he wrote :—" And thus, while every age is but another shew of the former, 'tis no wonder that Science hath not outgrown the dwarfishness of its pristine stature and that the intellectual world is such a microcosm. " <sup>23</sup> This is transmuted as follows in the *Essays*. " And thus while every age is but another shew of the former, 'tis no wonder that human science is no more advanced above its ancient stature." <sup>24</sup> These quotations speak for themselves. Science has definitely paved the way for greater simplicity and directness of expression, at least in the case of Glanvill.

In a lesser degree, the same is true of Cowley. Tilley, in the *Cambridge History of English Literature*, says that Cowley shows a complete transition from the old to the new style in prose. Gough, in his edition of Cowley's prose works, also notices the greater clarity of his later writings. Sprat himself provides a very good example of the new ideal of English prose style. He put into practice what he preached. Raleigh in an article on Sprat says, " His chief claim to remembrance lies in his efforts both by precept and example to purge English prose of its rhetorical and decorative encumbrances." <sup>25</sup> Minto, in his *Manual of English Prose Literature*, says:—" He (Sprat) is praised by Macaulay as a great master of our language. . . . He also receives a high tribute from Johnson. . . . Had the matter been more substantial, he might have taken a higher place in our literature." <sup>26</sup> This is a very fair estimate of Sprat's prose style. To his contemporaries, Sprat was, above all, a stylist. The ideas he gave expression to were mostly not his. But his language had a distinctive excellence of its own. For example, Cowley, in his *Ode to the Royal Society*, notices, and with great praise, only the style of the work.

And Ne're did Fortune better yet  
The Historian to the Story fit ;  
As you (Royal Society) from all old Errors free  
And purge the Body of philosophy ;  
So from all modern follies He (Sprat)  
Has vindicated Eloquence and Wit. <sup>27</sup>

<sup>23</sup> Jones, R. F., " Science and Prose Style," *P.M.L.A.*, 1930, XLV, p. 984.

<sup>24</sup> *Ibid.*, 1930, XLV, p. 984.

<sup>25</sup> Raleigh, W. A., *Thomas Sprat* ; Craik, *Prose Selections*, III, pp. 269-70.

<sup>26</sup> Minto, William, *Manual of Prose*, pp. 338-39.

<sup>27</sup> Cowley, Abraham, *Ode to the Royal Society*.

Glanvill's remarks about Sprat's *History* are to similar effect. "The style of that book hath all the properties that can recommend anything to an ingenious relish ; for 'tis manly, and yet plain ; natural, and yet not careless. The Epithets are genuine, the words proper and familiar, the periods smooth and of middle proportion."<sup>28</sup> This, I think, was Sprat's greatest contribution to English literature. He played an important part in redeeming the "well of English undefiled" from all the decorative and rhetorical encumbrances that had crept into the language.

What is true of written prose is also, in a measure, true of the spoken prose of this period. This is particularly noticeable in the sermons. Even as early as 1646, John Wilkins, in *Ecclesiastes or the Gift of Preaching*, advocated a natural way of preaching. It is not surprising that the scientific spirit reached the pulpit as early as this, when we realize that a large number of clergymen were interested in this new movement. John Wilkins himself became, later on, one of the founders of the Royal Society. After the Restoration, his views found a great exponent in another great clergyman, John Tillotson. Thomas Sprat, the first historian of the Royal Society, was himself a clergyman. His sermons were forceful, but never pedantic. Here again he has shown the distinctive qualities of his prose style.

W. H. Hutton, in the *Cambridge History of English Literature*, sums up the contribution of this period to English prose style in the following terms : "Pedantry, crabbed conceit, elaboration of metaphor or illustration, gave way to advanced directness, and the English language was made to show of what it was capable when it was not strained ; style casting off imitation became direct and plain. During the forty years which followed the return of Charles II, English divines, in their treatment of serious themes, laid the foundation on which Addison based his mastery over the language of his day."<sup>29</sup> More than any other factor, it was the new scientific movement, as exemplified by the Royal Society, that brought about this great change in the methods of English prose style.

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# A CRITICAL DISCUSSION OF THE STATUS OF SENSE-DATA

## Part III. The Time Relations of Perception

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LET me now briefly recapitulate the kind of analysis that in accordance with 'the relational theory of appearing' would be offered of an act of perception.

I am visually apprehending (say) the brown table in front of me. What conditions were involved in the coming to be of that perception? In the first place, we can assert on scientific grounds that there has happened definite stimulation of the visual organ, a stimulation or impression, physical in character, and occasioned by the vibratory motions that proceeded from the table. In consequence of that impression, there followed a certain change or disturbance in the retina, the optic nerve was affected, and impulses of some sort were conveyed to the cerebral centre in the cortex with which the optic nerve is connected. What ensued then? Not, it is contended, a complex of 'sensations', not a *sensum*, but a mental state or act which, when it is directed upon the object, discriminates its colour and other properties. Wave-motions, retinal changes, nerve impulses, cerebral disturbance—these have been parts of the mechanism through which the *act of perceiving* has come about; they do not in any way intrude into the content apprehended. On the contrary, what in and through the act of perceiving I am aware of is (say) a brown colour, which, in being aware of, I discriminate and distinguish as a quality belonging to the external reality I have come to recognise and to describe as a table. The production or occasioning of the act of perceiving is one thing; the discriminating of the brown colour by the act of perceiving when that act has arisen is quite another.

One difficulty which seems to be sometimes felt in regard to this analysis is that of understanding how the mind can leap, as it were, over the gap between it and its objects so as to grasp their characteristics. It is felt that the object ought to be 'in the mind', so to speak, if the mind is to apprehend it. This difficulty is, however, a self-made difficulty, due, I venture to think, to the habit of applying to mental facts notions which are appropriate only to physical ones. "In considering knowledge we should" as Professor Whitehead says, "wipe out all spatial metaphors, such as 'within the mind' and 'without the mind'". Knowledge is ultimate. There can be no

explanation of the 'why' of knowledge ; we can only describe the 'what' of knowledge. Namely we can analyse the content and its internal relations, but we cannot explain why there is knowledge".<sup>1</sup> The only answer, then, that can be given to a contention of this sort is that there is, in this respect, no real difficulty. There is no more reason why the mind should be precluded from perceiving things with which it is not contiguous than there is why it should be precluded from perceiving extended or coloured things although it is not itself extended or coloured.

The corresponding difficulty that arises in respect to the temporal relations of what is perceived is not, however, so readily disposed of. It may be stated in the following way. The "demonstrative proof", writes Professor Strong, "that the object is other than the sensible appearance is what may be called the *lateness* of perception. The sensible appearance is necessarily synchronous with the perceptive state ; whereas the object (*i.e.*, that phase of it which is perceived) belongs to an earlier moment. Thus, a star which we see in the sky may have ceased to exist ages ago ; a sufficient proof, surely, that what we now see (I mean the visual phenomenon, not that which the visual phenomenon reveals) is not the object itself".<sup>2</sup> Discounting, meanwhile, the awkward question as to how, if what we perceive is not the object itself, we yet perceive a 'phase' of it, this passage contains a precise statement of the difficulty which seems to confront any such analysis of perception as that which I have just sketched.

I will try to come to close quarters with the problem thus forced upon by raising the question in a more general form. Are there sufficient grounds for holding that a mental act of visual perception must be directed upon *the* precise object or physical thing from which the stimulation has proceeded which acts upon the sense organs of the percipient and produces the cerebral changes which are correlative with a specific process of perception ? May it not be the case that the stimulation which proceeds from a physical thing X may give rise to a mental act which is directed on an entirely different physical thing, say Y ? Let X be a physical thing existing in the place  $p_1$ , at the time  $t_1$ , and let certain modes of energy emanate from this physical thing, reaching the percipient subject S in the place  $p_2$ , at the time  $t_2$ . On this supposition, the moment  $t_1$  will be past in relation to  $t_2$ . Let  $p_3$ ,  $p_4$ , etc. be any other places and Y some other physical thing. Then one of the following alternatives seems *prima facie* possible : (i) S's mental act of apprehension may be directed on X in  $p_1$ , at  $t_1$ , or (ii) on X in  $p_1$  at  $t_2$ ; or (iii) on X in  $p_3$  at  $t_2$  if,

<sup>1</sup> *Concept of Nature*, p. 32.

<sup>2</sup> *Essays in Honour of William James*, pp. 173-74.



for instance, X has been moving from  $p_1$  to  $p_3$  in the time  $t_1 - t_2$ ; or (iv) on Y in  $p_4$  at  $t_1$ ; or (v) on Y in  $p_4$  at  $t_2$ ; or (vi) on Y in  $p_1$  at  $t_2$ . That is to say, the mental act may be directed (a) upon X irrespective of its position in space at the time  $t_2$ ; or (b) upon anything whatever irrespective of its particular position in space and time; or (c) upon X in  $p_1$ , at  $t_1$ ; or (d) upon whatever object occupies  $p_1$  at  $t_2$ .

There is, so far I can see, no *a priori* reason for ruling out any one of these alternatives as impossible. Yet there seem to be certain considerations that render both (a) and (b) improbable. So far as (b) is concerned, it does not seem to help as much. If stimulation emanating from X may give rise to a mental act which can be directed upon any other physical thing in the universe, there would appear to be no need even to postulate any external stimulation at all. The mental act might, namely, arise from purely internal conditions. It is, indeed, a view that is difficult to refute, but clearly it leaves the fact that our powers of visual apprehension are essentially limited and well-nigh inexplicable. The alternative (a) is, I think, likewise unavailing. It really comes to saying that stimulation originating from the place  $p_1$  may occasion a mental act that comes to be directed upon any other place at  $t_2$  provided that X be there. In other words, what determines the direction of the mental act upon any particular place is the presence of X at that place. But it is difficult to see why the mere presence of X should determine the direction of the mental act in this way. If it be possible that stimulation emanating from  $p_1$  at  $t_1$  may occasion a mental act that comes to be directed upon  $p_n$  if X be there, why might it not be the case that the act could be directed upon  $p_n$  at  $t_2$  in spite of X being elsewhere? Furthermore, suppose X be annihilated before  $t_2$ , that is to say, before the light-waves that emanate from it in the place  $p_1$  at  $t_1$  reach the sense organs of the percipient. Then according to (a) it would follow, that at  $t_2$ , S cannot be apprehending X, since *ex hypothesi* the mental act can only be directed on X if X is actually there. But the difficulty is that X may not be actually there. We know as an astronomical fact that it takes eight years for light rays from the star Sirius to reach the Earth; and, consequently, astronomers assume that we should still continue to see Sirius long after its annihilation, if that were to happen. Now, on the alternative (a) this would not be possible; and we should have to be prepared to shew that the astronomer's assumption is mistaken. And there is a further obstacle. Suppose the star Sirius should cease to exist at the moment M. Then, up to the last moment it will be emitting light-waves and presumably these, once emitted, would continue to affect conscious minds in a similar way no less after the moment M than before it. Yet, after the moment M, the mental acts occasioned by these modes of

stimulation would have no object upon which to be directed for, *ex hypothesi* they could have but one object, namely Sirius, and Sirius has ceased to exist ; and it is difficult to understand what a mental act under such circumstances could possibly mean.

A similar argument may be pressed against the alternative (d), although here it has not the same force. How on this supposition, it may be urged, are we going to explain our awareness of the movement of physical things ? Take a simple case. Let O be a physical thing moving through space in a circle at the centre of which is stationed a conscious subject C. Let us represent the successive positions of O in space by the series  $s_1 s_2 s_3 s_4 \dots s_n$  and the series of moment at which it occupies  $s_1, s_2 \dots s_n$  by the series  $t_1 t_2 \dots t_n$ . Now, on the supposition in question O will emit light-waves from  $s_1$  at  $t_1$ , from  $s_2$  at  $t_2$ , and so on. Let us assume that these light-waves reach the conscious subject C after an interval of (say)  $n$  seconds. Since C is at the centre of the circle which O is traversing, the interval  $n$  will be constant. Then, the times at which the bodily organs of the conscious subject C are affected by the light-waves emanating from O can be represented by the series  $t_1 + n, t_2 + n, t_3 + n$ , and so on. Now, at each of these moments the mental act of the conscious subject will be directed upon the places  $s_1, s_2, s_3$ , etc., respectively. But although the mental act is thus directed on  $s_1, s_2$ , etc., there will be no X there because *ex hypothesi* X has been moving. It would seem, therefore, to follow that we can never apprehend the movement of a material body at all. I doubt, however, whether this is a valid objection. It is true that if the mental act of apprehension be directed upon  $s_1, s_2$ , etc., at  $t_1 + n, t_2 + n$ , etc., respectively, in the manner mentioned, we should never become aware of the movement of O or even of O's existence. But this is assuming that for the apprehension of anything, the mental act which apprehends it must be occasioned by what is happening in that *very* thing and by that alone. And it may well be that this assumption is unwarranted. In that case we might account for the apprehension of motion by supposing that the events in the places  $s_1, s_2$ , etc., at the times  $t_1 - n, t_2 - n$ , respectively, give rise to stimulation that reaches the conscious subject C at the times  $t_1, t_2 \dots$ , etc., and that it is through the mental acts thus occasioned that apprehension of the movement of O takes place. There is, however, a possible objection that might be urged against this explanation. It implies, namely, that none of the places  $s_1, s_2, s_3$ , etc., can ever remain wholly empty, not, at any rate at the times  $t_1 + n, t_2 + n$ , etc., and also not at the times  $t_1 - n, t_2 - n$ , etc., respectively. The place  $s_1$  could not remain empty, for instance, at  $t_1 + n$ , because an act, which is not directed upon anything is admittedly impossible, and again it could not remain empty at  $t_1 - n$ , because in that case, there would

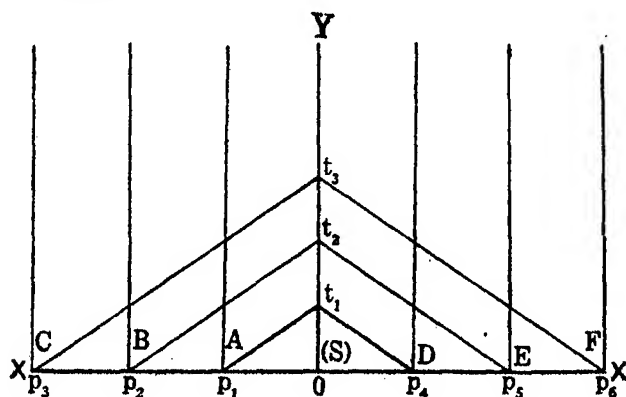
be no act at  $t_1$  to apprehend O at  $s_1$ . And the same would hold, of course, of all the places  $s_1, s_2, s_3$ , etc. This assumption, however, that no place can ever remain empty though by no means self-evident can doubtless be defended on a relational theory of space.

The alternative (d) does not, then, seem to me to be by any means an impossible view. Because there is an interval of eight minutes between the emission of the vibratory motions by the sun and the occurrence of the act of perception which *they* occasion, it does at all follow that the sun which we are perceiving is the sun of eight minutes ago. Although the wave-motions embarked upon their journey eight minutes ago, there is no reason why, by the act of perceiving to which those wave-motions give rise, we should be incapable of apprehending the sun as it now is. For, according to the 'relational theory of appearing' the manner in which the act of perception comes about settles in no way the mode of relation which subsists between that act, when it has come about, and the object upon which it is directed.<sup>3</sup>

But the alternative (c) also seems to me a possible view. The main difficulty here is our having to suppose that the percipient act can be directed upon something which only existed in the past. For instance the star Sirius, at the time  $t_1$  emits modes of energy which reach the bodily organism of the percipient at a much later moment  $t_2$ . By the moment  $t_2$  the phase of the star Sirius at the moment  $t_1$  is a thing of the past, it has ceased to exist and yet, on the view under consideration, it is the star Sirius as it was at  $t_1$  which is the object of the mental act of apprehension at  $t_2$ . How is it possible, it may be asked, that the mental act of apprehension can be directed upon something which is no longer existent? I think, however, this objection is due to a certain amount of misconception. In the first place, it is, of course, true that a mental act of sensuous apprehension cannot be directed on any thing which has never existed or which will exist only in the future; and when it is said that the mental act cannot be directed on something which *does not exist*, it is this consideration that seems to be weighing with the objector. But it is by no means obvious to me that the mind can have no cognitive relation with something which once existed but which at the time when the mental act is being directed upon it is an event of the past. It seems to me that we ought to distinguish between two senses of the word non-existence, according as it is applied to purely imaginary things, such as chimeras, and when it is used in such statements as for example, that Napoleon does not exist, the meaning of which is that the time of Napoleon's

<sup>3</sup> Cf. Prof. Hicks' paper in the *Proceedings of the Arist. Soc.*, N.S., Vol. XII, p. 179 sqq.

existence is past in relation to the time in which the statement is being made. There is, no doubt, some analogy, between the two senses, and it is true that, in either case, non-existence connotes absence of efficient activity. Again, I think, we ought to distinguish between events which are past and events which can only be remembered.<sup>4</sup> All events which can only be remembered are past. But it seems to me that not every event which is past need be capable of being only remembered. Perhaps the distinction may be roughly indicated by a diagram.



Let OX represent space and OY time.<sup>5</sup> Let O represent the place which the conscious subject S occupies. We will suppose that S is not moving, so that the successive phases of S will be represented by the line OY ; and objectively simultaneous, or corresponding, phases of different physical things will be represented by OX or any line parallel to it. Let  $p_1, p_2, p_3, p_4, p_5$  and  $p_6$  be the places occupied by the physical things A, B, C, D, E and F respectively. To simplify matters we will suppose that the distance  $O - p_1 = O - p_4$ ,  $O - p_2 = O - p_5$  and  $O - p_3 = O - p_6$ . It is assumed that in order that A should be apprehended it must emit modes of energy. Taking the case of visual perception we will suppose that light waves travel from A so as to reach S at time  $t_1$ . Light waves from D also will reach S at  $t_1$ . Join  $t_1$  and  $p_1$ ,  $t_1$  and  $p_4$  ; and consider the situation at  $t_1$ . At that moment the phase of A, light waves from which reached S at  $t_1$ , is already past ; so also are the corresponding phases of D, B, C, E and F. Yet these latter phases need not be capable of being only remembered. For, *ex hypothesi*, the modes of energy which emanated from them will reach OY later than

<sup>4</sup> Cf. Prof. Laird in the *Proceedings of the Arist. Soc.*, Supplementary Volume for 1929, p. 119.

<sup>5</sup> We need not for the present purpose consider the complications arising from the modern conception of space-time.

$t_1$  and so it will be only in the future with respect to  $t_1$  that these phases will be apprehended. On the other hand, consider the case of any object nearer to O than A or D. Its corresponding phase too will be past. But it will be capable of being only remembered. Because the light waves from it have reached S before  $t_1$ , and since they could never reach S again at  $t_1$ , or later unless they take a very circuitous route, it follows that the corresponding phases of these objects can never be sensuously apprehended after  $t_1$ . In fact, at  $t_1$  all the events whose place is below the line  $t_1 - p_1$  to  $t_1 - p_4$  are capable of being only remembered while all the events above these lines but below the straight line passing through  $t_1$  and parallel to OX will be past, yet capable of being sensuously apprehended only in the future. The past events which will be actually sensuously apprehended will be those on the straight line,  $t_1 - p_1$  and  $t_1 - p_4$ ; only the line will have to be slightly thick because the 'specious present' is not a mathematical point.

Stated in this way the alternative (c) does not seem to me to be by any means incredible. It certainly does not necessarily involve that we sensuously apprehend the same event twice over. But it does involve that this is logically possible. Indeed, in the case of an observer who moves with a velocity greater than the velocity of light, this will not be merely a logical possibility but an actual state of affairs. I think that the main reason why (c) is pronounced by some writers to be incredible, as for instance, by Mr. C. E. M. Joad,<sup>6</sup> is that it seems to them to involve the possibility that the same event can occur twice. The reasoning appears to be something like this: When I am apprehending (say) the sun, I am apprehending something which exists contemporaneously with my act of apprehension. Yet, what I am perceiving is a phase of the sun as it was eight minutes ago (the time it takes for light waves from the sun to reach me). Therefore, one of two conclusions must follow. Either what I am perceiving is not identical with the phase of the sun eight minutes ago,<sup>7</sup> or we must suppose that the same phase can occur twice. And since on the theory under consideration the latter conclusion must follow, its absurdity compels us to reject the theory. This argument involves, however, it seems to me, an obvious fallacy. It rests, namely, on the assumption that when I am looking (say) at the sun at any moment, I am perceiving something which is contemporaneous with my act of perceiving. But that is precisely the point that is in dispute. For, according to the theory (c) the something which is being perceived may not exist contemporaneously with the mental act which is perceptive of it. So that the argument, stated

<sup>6</sup> Cf. *Proceedings of the Arist. Soc.*, Supplementary Volume, 1929, p. 134.

<sup>7</sup> Cf. Professor Strong's statement quoted above.

in this way, begs the question at issue. All the same, it does not follow that the assumption that the object apprehended must be there contemporaneously with the mental act of apprehending it is false. All one can say is that it is not self-evident. I suspect that when it is said that what I perceive must be synchronous with my act of perception the unquestionable truth that is contained in this statement is simply that my act of apprehension must be directed upon some object in order that it should be an act of apprehension at all. And, since an object must exist in order that an act of apprehension should be directed upon it, it is supposed to follow that the object must exist contemporaneously with the act. For if it preceded the mental act it would be past, and that would mean that it is non-existent at the time when the act occurs, and this seems absurd. The upshot of the matter would appear to be that there is no sufficient reason for supposing that a knowing mind cannot transcend a temporal gap between it and its object as it admittedly can transcend a spatial one. If this be conceded "the awkward question as to how, if what we perceive is not the object itself, we yet perceive a 'phase' of it" does not arise.<sup>8</sup>

There is no difficulty on the view just indicated, in accounting for the fact that a physical thing which exists at one time may appear to exist at another time. The first point to be clear about, in this connexion, is that, although a past event may be apprehended by a present mental act, it does not follow that the mind must *know* that the event which is being apprehended is a past one. On the contrary, a natural way of locating an event in time is by taking it to be simultaneous with other events which are being apprehended along with it. That is to say, events, which happen at different times, will appear to be located at the same moment in virtue of the fact that they are simultaneously apprehended. Thus, two sounds appear to us to be simultaneous when we apprehend them together, although objectively there may be a temporal difference between the occurrence of the one and the occurrence of the other. Moreover, of two events the objectively earlier may appear to us to be the later, because it is apprehended after the objectively later. This will be so, for instance, when an objectively earlier sound is heard later than objectively later sound, as when the latter occurs at a place closer to the body of the percipient subject than the former.

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<sup>8</sup> Cf. *supra*, p. 135.

# SOME PROPERTIES OF BATEMAN'S $k$ -FUNCTION WITH NON-INTEGRAL INDEX

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In a previous paper<sup>1</sup> the properties of Bateman's  $k$ -function with non-integral index were investigated by using methods of analysis, and an integral representation, addition theorem and expansion were given. In the present note methods of operational calculus are used to get relations between this function and other members of the family of Confluent Hypergeometric functions.

I. We have from the integral<sup>1</sup>

$$k_{2n}(x) = e^{-x} \frac{\sin n\pi}{n\pi} \int_0^\infty e^{-\rho} \rho^{-n} (\rho + 2x)^n d\rho$$

$R(n) < 1$ ,  $n$  not an integer and  $x$  not negative, after a little transformation and with the same restrictions on  $n$ ,

$$e^p k_{2n}(p) = \frac{\sin n\pi}{n\pi} p \int_0^\infty e^{-px} \left[1 + \frac{2}{x}\right]^n dx \quad p > 0$$

This integral gives by the definition of an operational representation the following relation

$$e^p k_{2n}(p) \doteq \frac{\sin n\pi}{n\pi} \left(1 + \frac{2}{x}\right)^n \quad (1.1)$$

in which the Bateman's  $k$ -function occurs in the 'image'. We will transform this by using the theorem,

If  $f(p) \doteq h(x)$ , then  $f\left(\frac{p}{a}\right) \doteq h(ax)$ ,  $a$  being positive, and obtain

$$e^{\frac{p}{2a}} k_{2n}\left(\frac{p}{2a}\right) \doteq \frac{\sin n\pi}{n\pi} \left[1 + \frac{1}{ax}\right]^n \quad R(n) < 1 \quad (1.2)$$

Again applying the theorem:  $e^{-\lambda x} h(x) \doteq \frac{p}{p+\lambda} f(p+\lambda)$  (1.3)

to the operational representation

$$N_{s,m}(x) \doteq \frac{p(p-\frac{1}{2})^{s-m-1}}{(p+\frac{1}{2})^{s+m+1}} \quad R(m) > -\frac{1}{2} \quad (1.4)$$

we get

$$e^{\frac{x}{2}} N_{s,m}(x) \doteq \frac{p^{s-m+\frac{1}{2}}}{(p+1)^{s+m+\frac{1}{2}}} \quad R(m) > -\frac{1}{2} \quad (1.5)$$

To these operational representations (1.5) and (1.2) with  $a$  equal to unity, we apply Parseval's theorem as used in operational calculus, viz.,

If  $f_1(p) \doteq h_1(x)$ , and  $f_2(p) \doteq h_2(x)$  then

$$\int_0^\infty \frac{f_1(x) h_2(x)}{x} dx = \int_0^\infty \frac{f_2(x) h_1(x)}{x} dx$$

and obtain

$$\begin{aligned} \int_0^\infty x^{-1} N_{s,m}(x) k_{2m}\left(\frac{x}{2}\right) dx &= \frac{\sin n\pi}{n\pi} \int_0^\infty \frac{x^{s-m-n-\frac{1}{2}}}{(1+x)^{s+m-n+\frac{1}{2}}} dx \\ &= \frac{\sin n\pi}{n\pi} \frac{\Gamma(2m) \Gamma(s-m-n+\frac{1}{2})}{\Gamma(s+m-n+\frac{1}{2})} \end{aligned} \quad (1.6)$$

Now, functions like Bateman and Laguerre polynomials,  $M_{k,m}$  and Parabolic cylinder functions, Bessel functions of the first kind and many others are obtainable from  $N_{s,m}$  function by giving to  $s$  and  $m$  suitable values. We will content ourselves by giving the results in the final form by omitting the calculations, as the transformations are well known.<sup>2</sup>

In the case of all the following results,  $R(n)$  is less than one and  $n$  is not an integer.

$$\begin{aligned} \int_0^\infty x^{m-1} e^{-x} k_{2m}(x) dx \\ = \frac{\sin n\pi}{n\pi} \frac{\Gamma(m) \Gamma(m+1) \Gamma(1-n)}{2^m \Gamma(m-n+1)} \quad R(m) > -1. \end{aligned} \quad (1.7)$$

$$\begin{aligned} \int_0^\infty x^{m-1} e^{+x} k_{2m}(x) dx \\ = \frac{\sin^2 n\pi}{n\pi \sin(m+n)\pi} \cdot \frac{\Gamma(n+1) \Gamma(m) \Gamma(m+1)}{2^m \Gamma(m+n+1)} \\ R(m) > -1. \end{aligned} \quad (1.8)$$

$$\begin{aligned} \int_0^\infty x^{-\frac{1}{2}} D_{2l}(\sqrt{2x}) k_{2m}\left(\frac{x}{2}\right) dx \\ = \frac{\sin n\pi}{n\sqrt{\pi}} \cdot \frac{(-2)^{l+1} \Gamma(l+\frac{1}{2}) \Gamma(l-n+1)}{\Gamma(l-n+\frac{1}{2})}, \\ l \text{ being an integer.} \end{aligned} \quad (1.9)$$



$$\int_0^{\infty} x^{-1} D_{2l+1}(\sqrt{2x}) k_{2n}\left(\frac{x}{2}\right) dx$$

$$= \frac{\sin n\pi (-)^l 2^{l+1} \Gamma(l + \frac{n}{2}) \Gamma(l - n + 1)}{n \sqrt{\pi} \Gamma(l - n + \frac{n}{2})},$$

$l$  being an integer. (1·10)

$$\int_0^{\infty} x^{-1} k_{2m}(x) k_{2n}(x) dx$$

$$= \frac{\sin n\pi (-)^{m-1}}{n\pi (m-n)} \quad m \text{ being a positive integer.} \quad (1·11)$$

$$\int_0^{\infty} x^{m-1} I_m\left(\frac{x}{2}\right) k_m\left(\frac{x}{2}\right) dx$$

$$= \frac{\sin n\pi}{n \sqrt{\pi} \cos(m+n)\pi} \frac{\Gamma(2m) \Gamma(m + \frac{1}{2})}{\Gamma(m + n + \frac{1}{2}) \Gamma(m - n + \frac{1}{2})} \quad (1·12)$$

$$\int_0^{\infty} x^{m-1} e^{-\frac{1}{2}x} k_{2n}\left(\frac{x}{2}\right) L_l^m(x) dx$$

$$= \frac{\sin n\pi \Gamma(m + l + 1) \Gamma(m) \Gamma(l - n + 1)}{n\pi l! \Gamma(l + m - n + 1)}$$

$l$  being an integer. (1·13)

$$\int_0^{\infty} x^{m-1} e^{\frac{1}{2}x} k_{2n}\left(\frac{x}{2}\right) L_l^m(-x) dx$$

$$= \frac{\sin n\pi \sin(l+n)\pi}{n\pi \sin(m+n+l)\pi} \frac{\Gamma(m) \Gamma(l + n + 1) \Gamma(m + l + 1)}{l! \Gamma(m + l + n + 1)}$$

$l$  being an integer. (1·14)

$$\text{or } = \frac{(-)^m \sin n\pi (m+l)! (m-1)! \Gamma(l + n + 1)}{n\pi l! \Gamma(l + m + n + 1)} \quad (1·15)$$

$l$  and  $m$  being integers.

The relations involving Sonine's polynomials can be obtained by using the relation

$$L_s^\alpha(x) = (-)^s (a+s)! T_s^\alpha(x).$$

II. So far we have obtained relations between the  $k$ -function with non-integral index and particular forms of confluent hypergeometric functions. We will now obtain the result involving Whittaker's  $W_{k,m}$  function.

We have

$$p^{-m} e^{-\frac{1}{p}} \div x^{\frac{m}{2}} J_m(2\sqrt{x}) \quad R(m) > 0 \quad (2·1)$$

Hence by the application of Parseval's theorem to this and to (1.2) we get

$$\begin{aligned}
 & \int_0^{\infty} e^{\frac{x}{2a}} x^{\frac{m}{2}-1} J_m(2\sqrt{x}) k_{2n}\left(\frac{x}{2a}\right) dx \\
 &= \frac{\sin n\pi}{n\pi} \int_0^{\infty} x^{-m-1} e^{-\frac{1}{x}} \left(1 + \frac{1}{ax}\right)^n dx \\
 &= \frac{\sin n\pi}{n\pi} \int_0^{\infty} e^{-t} t^{m-1} \left(1 + \frac{t}{a}\right)^n dt \\
 &= \frac{\sin n\pi}{n\pi} \Gamma(m) a^{\frac{1}{2}(m-n-1)} e^{\frac{1}{2}a} W_{\frac{1}{2}(n-m+1), \frac{1}{2}(m+n)}(a) \quad (2.2)
 \end{aligned}$$

using the result

$$W_{k,m}(z) = \frac{e^{-\frac{1}{2}z} z^k}{\Gamma(\frac{1}{2}-k+m)} \int_0^{\infty} e^{-t} t^{-k-\frac{1}{2}+m} (1+t/z)^{k-\frac{1}{2}+m} dt$$

$$R(k - \frac{1}{2} - m) \leq 0 \quad (2.3)$$

Again Angelescu's polynomial  $\pi_n(x)$  being of the type of Generalized Laguerre polynomial belongs to the family of confluent hypergeometric functions and hence can be connected with the  $k$ -function with non-integral index. For this we can transform by using (1.3) the operational representation

$$[\pi_m(y) - \pi_m(x+y)] \doteq \sum_{r=0}^{m-1} \frac{m!}{r!} \pi_r(y) \frac{(p-1)^{m-r-1}}{p^{m-r}}$$

into

$$e^{-x} [\pi_m(y) - \pi_m(x+y)] \doteq \sum_{r=0}^{m-1} \frac{m!}{r!} \pi_r(y) \frac{p^{m-r}}{(p+1)^{m-r+1}}.$$

Apply Parseval's theorem to this and to

$$e^{\frac{p}{2}} k_m\left(\frac{p}{2}\right) \doteq \frac{\sin n\pi}{n\pi} \left(1 + \frac{1}{x}\right)^n$$

obtainable from (1.2) by putting  $a$  equal to unity, we get

$$\begin{aligned}
 & \int_0^{\infty} x^{-1} e^{-\frac{x}{2}} k_{2n}\left(\frac{x}{2}\right) [\pi_m(y) - \pi_m(x+y)] dx \\
 &= \frac{\sin n\pi}{n\pi} \sum_{r=0}^{m-1} \frac{m!}{r!} \pi_r(y) \int_0^{\infty} \frac{x^{m-n-r-1}}{(1+x)^{m-n-r+1}} dx \\
 &= \frac{\sin n\pi \cdot m!}{n\pi} \sum_{r=0}^{m-1} \frac{\pi_r(y)}{r! (m-n-r)} \quad (2.4)
 \end{aligned}$$

A relation with Pearson-Cunningham function will now be obtained. We assume for this that  $R(n) < 0$  and transform the operational representation (1.2) with the help of (1.3) into

$$\frac{p}{p+\lambda} e^{\frac{p+\lambda}{2a}} k_{2n} \left( \frac{p+\lambda}{2a} \right) \div \frac{\sin n\pi}{n\pi} e^{-\lambda x} \left( 1 + \frac{1}{ax} \right)^n$$

To this apply the theorem:  $\int_0^\infty \frac{f(p)}{p} dp = \int_0^\infty \frac{h(x)}{x} dx$ , if  $h(x) \div f(p)$ ,

and get

$$\begin{aligned} \int_0^\infty \frac{e^{\frac{p+\lambda}{2a}}}{p+\lambda} k_{2n} \left( \frac{p+\lambda}{2a} \right) dp &= \frac{\sin n\pi}{n\pi} \int_0^\infty e^{-\lambda x} a^{-n} x^{-n-1} (1+ax)^n dx \\ &= \left( \frac{\lambda}{a} \right)^n \frac{\sin n\pi}{n\pi} \int_0^\infty e^{-t} t^{-n-1} \left( 1 + \frac{at}{\lambda} \right)^n dt \\ &= \frac{1}{n \Gamma(1+n)} \left( \frac{a}{\lambda} \right)^{\frac{1}{2}} e^{\frac{\lambda}{2a}} W_{n+\frac{1}{2}, 0} \left( \frac{\lambda}{a} \right) \quad (2.5) \end{aligned}$$

after using the result (2.3) and  $\Gamma(z) \Gamma(-z) = \frac{\pi}{z \sin \pi z}$ .

Now put  $ay = p + \lambda$  on the left-hand side and replace  $\frac{\lambda}{a}$  by  $l$ , we get

$$\begin{aligned} \int_0^\infty y^{-1} e^{\frac{y}{2l}} k_{2n} \left( \frac{y}{2} \right) dy &= \frac{1}{n \Gamma(n+1)} \frac{1}{\sqrt{l}} e^{\frac{l}{2}} W_{n+\frac{1}{2}, 0}(l) \\ &= \frac{(-)^{1-n}}{n} e^l \omega_{n,0}(l) \end{aligned}$$

$R(n) < 0$ ,  $n$  not an integer,  $\omega_{n,m}(z)$  denoting Pearson-Cunningham function.<sup>3</sup>

III. When  $n$  is not an integer we have also another operational representation in which the  $k$ -function occurs as 'original' function, viz.,

$$k_{2n}(x) \div \frac{\sin n\pi}{\pi} \sum_{m=0}^\infty \frac{p(p-1)^m}{(m-n)(m+1-n)(p+1)^{m+1}} \quad (3.1)$$

Again we have from (1.4)

$$N_{s,l}(2x) \div \frac{2^{2l} p(p-1)^{s-l-\frac{1}{2}}}{(p+1)^{s+l+\frac{1}{2}}} \quad R(l) > -\frac{1}{2} \quad (3.2)$$

Putting  $s = -\frac{1}{2}$  and changing  $l$  into  $l - \frac{1}{2}$  we get

$$N_{-\frac{1}{2}, l-\frac{1}{2}}(2x) \div \frac{2^{2l-1} p(p-1)^{l-\frac{1}{2}}}{(p+1)^{l-\frac{1}{2}}} \quad R(l) > 0 \quad (3.3)$$

Now

$$\begin{aligned} & -\frac{1}{p} \cdot \frac{2^{2l-1} p (p-1)^{-l-\frac{1}{2}}}{(p+1)^{l-\frac{1}{2}}} \cdot \frac{\sin n\pi}{\pi} \sum_{m=0}^{\infty} \frac{p (p-1)^m}{(m-n) (m+1-n) (p+1)^{m+1}} \\ & = -\frac{\sin n\pi}{2\pi} \sum_{m=0}^{\infty} \frac{2^{2l} p (p-1)^{m-l-\frac{1}{2}}}{(m-n) (m+1-n) (p+1)^{m+l+\frac{1}{2}}} \\ & \doteq -\frac{\sin n\pi}{2\pi} \sum_{m=0}^{\infty} \frac{N_{m,l}(2x)}{(m-n) (m+1-n)} \end{aligned}$$

from (3.2) after interpretation of the right-hand side. The left-hand side can be interpreted with the help of the product theorem of operational calculus as applied to (3.1) and (3.3), we obtain

$$\int_0^x k_{2n}(x-\xi) N_{-\frac{1}{2}, l-\frac{1}{2}}(2\xi) d\xi = \frac{1}{2} \int_0^{2x} k_{2n}\left(x-\frac{\xi}{2}\right) N_{-\frac{1}{2}, l-\frac{1}{2}}(\xi) d\xi$$

Hence changing  $x$  into  $\frac{1}{2}x$  we get

$$\int_0^x k_{2n}\left(\frac{x-\xi}{2}\right) N_{-\frac{1}{2}, l-\frac{1}{2}}(\xi) d\xi = -\frac{\sin n\pi}{\pi} \sum_{m=0}^{\infty} \frac{N_{m,l}(x)}{(m-n) (m+1-n)}. \quad (3.4)$$

$R(l) > 0$ ,  $R(n) < 1$ ,  $n$  not an integer.

The operational representations

$$e^x k_{2n}(x) \doteq -\frac{\sin n\pi}{\pi} \sum_{m=0}^{\infty} \frac{1}{(m-n) (m+1-n)} \cdot \left(1-\frac{2}{p}\right)^m \quad (3.5)$$

and

$$e^x N_{\frac{1}{2}m+n+\frac{1}{2}, \frac{1}{2}m}(2x) \doteq \frac{2^m (p-2)^n}{p^{m+n}} \quad (3.6)$$

can be easily obtained from (3.1) and (3.2).

Now

$$\begin{aligned} & \frac{1}{p} \cdot \frac{1}{p^{2l-1}} \cdot \frac{\sin n\pi}{\pi} \sum_{m=0}^{\infty} \frac{(-)^{m+1} (2-p)^m}{(m-n) (m+1-n) p^m} \\ & = -\frac{\sin n\pi}{\pi} \sum_{m=0}^{\infty} \frac{(-)^{m+1} (2-p)^m}{(m-n) (m+1-n) p^{m+2l}} \\ & \doteq -\frac{\sin n\pi}{\pi} \sum_{m=0}^{\infty} \frac{e^x N_{m+l+\frac{1}{2}, l}(2x)}{2^{2l} (m-n) (m+1-n)} \end{aligned}$$

after interpretation with the help of (3.6). The left-hand side can be interpreted with the help of the product theorem, (3.5) and

$$\frac{x^{2l}}{\Gamma(2l+1)} \doteq \frac{1}{p^{2l}} \quad R(l) > -1$$

and we get

$$\int_0^1 (x-\xi)^{2l-1} e^{t-x} k_{2n}(\xi) d\xi = -\frac{\sin n\pi}{\pi} \frac{\Gamma(2l)}{2^{2l}} \sum_{m=0}^{\infty} \frac{N_{m+l+1, l}(2x)}{(m-n)(m+1-n)} \quad (3.7)$$

For different values of  $l$ , the results (3.4) and (3.7), yield as before many cases involving particular forms of confluent hypergeometric functions. A particular case is worth noting. For  $l = \frac{1}{2}$ , (3.4) and (3.7) reduce to the following relations between Bateman's function of non-integral index and Bateman's polynomial.

$$\int_0^1 e^t k_{2n}(x-\xi) d\xi = \frac{\sin n\pi}{2\pi} \sum_{m=0}^{\infty} \frac{(-)^m k_{2m}(x)}{(m-n)(m+1-n)} \quad (3.8)$$

and

$$\int_0^1 e^{-t} k_{2n}(x-\xi) d\xi = \frac{\sin n\pi}{2\pi} \sum_{m=0}^{\infty} \frac{(-)^{m+1} k_{2m+2}(x)}{(m-n)(m+1-n)}. \quad (3.9)$$

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## SOME RECENT FINDS OF APABHRAṂŚA LITERATURE

BY HIRALAL JAIN, M.A., LL.B.

IN an article on 'Apabhraṁśa Literature' contributed to the *Allahabad University Studies*, Vol. I, 1925, I had noticed in brief the works in Apabhraṁśa which had been discovered by me or had become known through other sources till then. I had since then continued my search for manuscripts of Apabhraṁśa works and I propose to notice here some of the works which I have been able to discover.

1. *Pajjuṇṇa-kahā*,<sup>1</sup> Sk. *Pradyumnakathā* of *Simha* is a poem in 15 *sandhis* containing in all 306 *kaḍavakas* of about 3050 *granthas*. It narrates the life of Pradyumna Kumāra who was the son of Kṛṣṇa and the 21st Kāma-deva out of the twenty-four recognised in the Jaina hierarchy of remarkable persons. In the introductory part of the work we are told that Siddha was inspired by the goddess of speech in dream to write a poem, and the actual theme of the poem was suggested to him by an ascetic named *Amayacanda* Sk. Amṛtacandra, the pupil of Maladhārideva *Mādhavacandra* who visited *Baṁbhaṇavāḍa* during his religious tour. At that time Baṁbhaṇavāḍa was governed by *Bhullaṇa* a Kṣatriya *Guhilaputra* and a dependant (lit. servant) of *Ballāla* the son of Raṇadhoriya (Raṇadhīra?).<sup>2</sup>

<sup>1</sup> The MS. belongs to the Jaina temple at Farrukhnagar, Meerut, U.P. Another MS. deposited at the *Chaubisi* Jain Temple at *Chanderi* in Gwalior State has just come to my notice. It is dated V. S. 1550 Kartika Vadi 14 Wednesday when Sultan Gyasuddin was ruling over Malwa. I have not yet had the opportunity of examining this work thoroughly.

<sup>2</sup> सरसइ सुसरा । महु होउ बरा ॥ इय वज्जरइ । फुडु सिद्धु कई ॥  
इयचोरमए । णिसि भरिवि गए ॥ पहरइ ठिए । चितंतु हिए ॥  
बला-जा सुतउ अच्छइ ता तहि पिच्छइ णारि एक मणहारिणि ।  
सियवथणियच्छिय कंजयहत्थिय अक्खसुत्त-सुयधारिणिय ॥ २ ॥  
सा चवेइ सिविणंति तक्खणे । काइ सिद्ध चितवहि णियमणे ।  
तं सुणेवि कई सिद्धु जंपए । मज्झु माइ णिरु हिषउ कंपए ।  
कब्बुद्धि चितंतु लज्जिओ । तक्क-छंद-लक्खणविबज्जिओ ।  
\* \* \* \* \*  
तं सुणेवि जाजइ महारसई । णिसुणि सिद्ध जंपइ सरासई ।  
बला-आलसु संकिळहि हियउ म मिळहि मज्झु वयणु इउ विदु धरई ।  
इउं मुणिवरवेसिं कहिभि बिसेसि कब्बु किं पि तं सुहुं करहि ॥ ३ ॥

Further on we are told that the names of Siddha's parents were *Paripāiṣya* and *Devana*.<sup>3</sup> From this description we learn that the poet belonged to the town of *Bambhaṇavāḍa* which was included in the kingdom of Ballāla. The town may be identified with *Bāmanwād* in Sirohi State of Jodhpur. But we are not sure about king Ballāla. He may, however, be the Mālava king of that name who is claimed to have been killed<sup>4</sup> by Yaśodhavalā, the Parmāra Mahāmaṇḍaleśvara of Ābu, and a feudatory of king Kumārapāla of Gujrat, for whom we have a dated inscription<sup>5</sup> of

ता मलधारिदेउ मुणिपुंगमु । णं पञ्चक्खु धम्म उवसमु दसु ।  
माहवचंदु आसि सुपसिद्धउ । जो खम-दम-जम-णियमसमिद्धउ ।  
तासु सीसु तव-तेयदिवायरु । वय-तव-णियम-सीलरयणायरु ।  
तक्क-लहरि-संकोलिय-परमउ । वर-वायरण-पउर-पसरिय-पउ ।  
जासु भुवणि दूरंतरु वंकिवि । थिउ पच्छण्णु मयणु आसंकिवि ।  
अमयचंदु णामेण भडारउ । सो विहरंतु पणु बुहसारउ ।  
सरि-सर-णंदणवण-संछण्णउ । मठ-विहारजिणभयणरवण्णउ ।  
बंभणवाडउ णामि पट्ठणु । अरिणरणाहसिल्लदलवट्ठणु ।  
जो भुंजइ अरिणरखयकालहं । रणधोरियहो सुयहो बल्लालहो ।  
जासु भिच्चु दुज्जणमणसल्लणु । खसिउ गुहिलपुत्तु जहिं भुल्लणु ।  
तहिं संपत्तु मुणीसरु जावहिं । भव्वलोउ आणदिउ तावहिं ।

घत्ता-णियगुण अपसंसिवि मुणिहिं णमंसिवि जो लोएहिं अदुगुंछिउ ।  
णय-विणयसमिद्धिं मुणु कइसिद्धिं सो जइवरु आउच्छिउ ॥ ४ ॥  
अहु अहु परमेसर बुहपहाण । तव-णियम-सील-संजम-णिहाण ।  
सुहणंतरि जो मइं कलि दिट्ठु । सो हउं मणि मणिउ अइविसिट्ठु ।  
तुम्हागमणि जाणियउ अज्जु । ता मुणिणा जंपिउ अइमणोज्जु ।  
णाणाविहकोऊहलिहिं भरिउ । तुहुं तुरिउ करहि पज्जुण्णचरिउ ।

<sup>3</sup> पुणु पंपाहय-देवणणंदणु । भवियणजणमणणयणाणंदणु ।  
बुहयणजणपयपंकयछप्पउ । भणइ सिद्धु पणमिय परमप्पउ ॥

<sup>4</sup> तस्मान्मही... विदितान्यकलत्रगात्र-  
स्पर्शो यशोधवल इत्यवलम्बते स्म ।  
यो गुर्जरक्षितिपतिप्रतिपक्षमाजौ  
बल्लालमालभत मालवसेदिनिन्द्रम् ।

—अचलेश्वरके मंदिरका लेख : भारतके प्राचीन राजवंश, भा. १, पृ. ७६.

यश्चालुक्यकुमारपालनृपतिप्रत्यर्थितामागतम् ।

गत्वा सत्वरमेव मालवपतिं बल्लालमालम्बवान् ॥ ३५ ॥

—आबूप्रशस्तिः, Ep. Ind., VIH, p. 211.

<sup>5</sup> रेकः भारतके प्राचीन राजवंश, भा. १, पृ. ७६.

V.S. 1202 = A.D. 1146. If this be correct then our poet may be said to belong to the early part of the 12th century A.D.

*Siddha*, however, does not appear to be the author of the entire work as we have it. His name appears regularly in the colophons up to the end of the 8th sandhi. But in the colophon to the 9th sandhi *Simha* is mentioned in place of *Siddha*. At the 10th sandhi, again, there is the name *Siddha*.<sup>6</sup> It might be conjectured from this that *Simha* was another name or epithet of the same poet. But from the 11th sandhi onwards in the colophons we get also the name of *Simha*'s father as *Buha Ralhaṇa*.<sup>7</sup> Then again the *praśasti* at the end leaves us in no doubt about the separate personality of *Simha*, because here we are told that the poet *Simha* was the son of *Ralhaṇa Pandit* and his wife *Jinamatī* of *Gurjar* family. He had three younger brothers named *Śubhāṅkara*, *Sādhārāṇa* and *Mahādeva*. He was advised by his preceptor to complete the poem which had remained incomplete on account of the death of *Siddha*, while he was yet composing it, for "Blessed are they who bear up uninterruptedly the feats and poetry of others."<sup>8</sup>

<sup>6</sup> इय पज्जुणकहाए पयडियधम्मत्थकाममुक्खाए कइसिद्धविरइयाए पढमो संधी । . . . इय पज्जुणकहाए पयडियधम्मत्थकाममुक्खाए कइसिद्धविरइयाए कुमारबहुविज्जालाभमातीमिलासवण्णणं णाम अट्ठमो संधी समत्तो । . . . कइसीहविरइयाए णवमो संधी । . . . कविसिद्धविरइयाए दसमो संधी ।

<sup>7</sup> बुहरत्तुणसुयकइसीहविरइयाए सच्चमहादेवीमाणभंगो णाम एकादसमो संधी समत्तो ।

<sup>8</sup> तह पयरउ गिरुवममइयमाण । गुज्जरकुलणहउज्जोयमाण ।  
 ओ उहयपवरवाणीविलासु । एवंविहविउसहो रक्खणासु ।  
 तहो पणइणि जिणमइ सुखसील । सम्मत्तवंति णं धम्मलील ।  
 कइसीहु ताहि गम्भंतरम्मि । संभविउ कमलु जिह सुरसरम्मि ।  
 जणवच्छलु सज्जणजणियहरिसु । सुहवंतु तिविहवइरायसरिसु ।  
 उप्पण्णु सहोयर तासु अवह । णामेण सुहंकरु गुणहं पवर ।  
 साहारणु लहुवउ तासु जाउ । धम्माणुरतु अइदिव्वकाउ ।  
 तहो अणु वर महएउ दिसु साह । सविणोउ विणंकुस ण सरुधारु (?) ।  
 जावच्छहि चत्तारि वि सुभाय । परउवयारिय जणजणियराय ।  
 एक्कहि दिणि गुरुणा भ (-णिउ व-) च्छ । णिसुणहि छप्पय कइराय द्दच्छ ।  
 ओ बालसरसइ गुणसमीह । किं अविणोएं दिण गमहि सीह ।  
 चउविहपुरिसत्थरसोहभरिउ । णिव्वाहहि जइ पज्जुणचरिउ ।  
 कइ सिद्धहो विरयंतहो विणासु । संपण्णउ कम्मवसेण णासु ।  
 महु वयणु करहि किं तुव मणेण । . . . . .  
 . . . . . तं (ते) जए यत्ता (धण्णा) ।  
 परकज्जं परकव्वं विहउतं जेहि उद्धरिय ॥

This *praśasti* is not found by me in the Farrukhnagar MS. which is dated V.S. 1517 Sunday, the 3rd of the bright fortnight of Mārgaśīrṣa. But it was found in an incomplete MS. utilised



That *Siddha* and *Simha* were different poets and the latter only completed what was left incomplete by the former is also suggested by the ending colophon of the MS. which mentions Siddha and Simha as the authors of the work.<sup>9</sup>

2. *Sukumāla Cariu*<sup>10</sup> of Sirihar Sk. Śrīdhara, is a poem in six *sandhis* and contains 124 *kaḍavakas*. It narrates the life of the pious Sukumāla who later on becomes a saint. The poet has given to us a good deal of information about himself and the circumstances that led to the composition of the work.<sup>11</sup> One day in the Jīna temple at *Valad* which was ruled

by Mr. Mohanlal Desai for his article "कुमारपालना समयनुं एक अपभ्रंश काव्य" contributed to the *Atmānanda Centenary Commemoration Volume*, Bombay, 1936. This MS. was dated V.S. 1532.

<sup>9</sup> इति प्रष्टुमन्नचरित्रं सिद्ध तथा सिंहकवेः कृतं समाप्तं ॥ संवत् १५१७ वर्षे मार्गशीर्षे सुदि ३ रविवारे । ग्रंथाग्रं ३०५० ज्ञातव्यमिति ॥

<sup>10</sup> I have seen two MSS. of this work, one dated Samvat 1486 and the other Samvat 1629, both deposited in the Terāpanthi Barā Mandir Bhandar at Jaipur.

11 एकहिं दिने भव्ययणपियारए । बल्लडइ णामे गामे मणहारए ।  
 सिरिगोविंदचंदणिवपालिए । जणवइ सुहयारयकरलालिए ।  
 दुगुणियबारहजिणवरमंडिए । पवणुद्धयधयवडअवर्णिए ।  
 जिणमंदिरे वक्खाणु करंतें । भव्ययणहं चिरु दुरिउ हरंतें ।  
 कलवाणीए बुहेण अणिदें । पोमसेणणामेण मुणिदें ।  
 भासिउ संति अणेयइं सत्थइं । जिणसासणे अवराइं पसत्थइं ।  
 पर सुकुमालसामिणामालहो । करुहसुहविवरियवरवालहो ।  
 चारुचरिउ महुं पडिहासइ तह । गोवरु बुहयणमणहरणु वि जह ।  
 तं णिसुणेवि महियले विक्खाए । पयडसाहुपीथेतणुजाए ।  
 सलखणजणणीगन्धुप्पणें । पउमाभत्तारेण रक्खणें ।  
 सहरसेण कुबरेण पउत्तउ । भो मुणिवर पईं पभणित जुत्तउ ।  
 तं महु अग्गइ किण्ण समासहि । विवरेविणु माणसु उल्लासहि ।  
 ता मुणि भणइ बप्प जइ णिसुणहि । पुब्बजम्मकयदुरियइं विहुणहि  
 घत्ता-अब्भत्थिवि णिरु सिरिहरु सुकइ तत्थरित्तु विरयावहि ।  
 इह रत्ति वि कित्ति णु तवतणउ सुहु परत्थे धुउ पावहि ॥ २ ॥  
 ता अण्णहि दिणि तेण छइल्लें । जिणभणियागमसत्थरसिल्लें ।  
 कइ सिरिहरु विणएण पउत्तउ । तुहुं परियाणियजुत्ताजुत्तउ ।  
 तुहुं बहुहिययसोक्खवित्थारणु । भवियणमणवित्तियसुहकारणु ।  
 जइ सुकुमालसामिकइ अक्खहि । विरएविणु महु पुरउ ण रक्खहि ।  
 ता महु मणहु सुक्खु जायइ लइ । तं णिसुणेवि भासइ सिरिहरु कइ ।  
 भो पुरवाडवंससिरिभूसण । धरियविमलसम्मत्तविहूसण ।  
 एकचित्तु होएवि आयण्णहि । जं पईं पुत्तिछउ मा अवगण्णहि ।

over by king Govindacandra, an ascetic named *Paumaeva Sk. Padmadeva* delivered a sermon during which he referred to the charming story of *Sukumāla Swāmi*. One of his listeners was *Kumāra*, the son of *Pithe Sāhu*, who felt interested to know more about the story of *Sukumāla Swāmi*. But the sage referred him to the good poet *Śrīdhara* to have his curiosity satisfied. Thus, *Śrīdhara* was induced by *Kumāra Sāhu* to compose the poem. This patron of learning is said to have belonged to the *Pauravāda* family and the poet has commemorated his name in the colophon to each sandhi<sup>12</sup> and has also praised him in several verses added at the beginning of the sandhis.<sup>13</sup> At the end of the work the poet has given a detailed genealogy of his patron. There was one *Jaggu Sāhu* and his wife *Galhā*. They had eight sons, *Pithe* being the eldest. The other seven brothers were *Mahinda*, *Tikka*, *Jalhana*, *Salakkhana*, *Sampunna*, *Samudapāla* and *Nayapāla*. *Pithe*'s wife was *Salakkhanā* from whom he had two sons *Kumāra* and *Nānū*. *Kumāra* had for his wife *Paumā Sk. Padmā* from whom he had four sons *Pālhana*, *Sālhana*, *Bālhana* (?) and *Sūpat*.<sup>14</sup> The place *Valad* where the poet wrote may be identified with the modern *Valad* in the Ahmedabad

12 इय सिरिसुकुमालसा-मिमणोहरचरिए सुंदरयररणणियरभरिए विवुहसिरिसुकुह-सिरिहर-  
विरहए साहुपीथेपुत्तकुमरणांमकिए आगिगभूह-वाउभूह-सूरमित्तमेलावयवणणो णाम पढमो परिच्छेउ  
समत्तो ॥ १ ॥

13

यस्सर्ववित्पदपयोरुहजो द्विरेफः

सद्दृष्टिस्तममतिर्मद-मानमुक्तः ।

श्लाघ्यः सदैव हि सतां विदुषां च सोऽत्र

श्रीमत्कुमार इति नन्दतु भूतलेऽस्मिन् ॥

(at the beginning of Sandhi 2, etc.)

14

आसि पुरा परमेट्टिहे भत्तउ । चउविहचारुदाणअणुरत्तउ ।  
सिरिपुरवाडवंसमंडणधउ । णियगुणणियराणंदियबंधउ ।  
गुरुभत्तिए परिणमियमुणीसरु । णामें साहुरजग्गु वणीसरु ।  
तहो गच्छा णामेण पियारी । गेहिणि मणहत्तिछिय सुहयारी ।  
पविमलसीलाहरणविहूसिय । सुहि-सज्जण-बुहयणहं पसंसिय ।  
ताहं तणूरु पीथे आयउ । जणसुहयरु महियले विक्खायउ ।  
अवरु महिदें बुचइ धीयउ । बुहयणमणहरु तिक्खउ तइयउ ।  
जक्खणु णामें भणित चउत्थउ । पुणु वि सलक्खणु दाणसमत्थउ ।  
छट्ठउ सुउ संपुणु हुअउ जह । समुदपालु सत्तमु जायउ तह ।  
अट्ठमु सुउ णयपालु समासित । विणयाइयगुणगणहिं विहूसित ।  
पढमहो पिय णामेण सलक्खण । लक्खणकलियसरीर वियक्खण ।

district of Gujrat. *Govindacandra* appears to have been a local ruler. The poet has recorded the date of the completion of his work in detail<sup>15</sup> as Monday, the 3rd of the dark fortnight of Agraḥaṇa, in the year 1208, presumably of the Vikrama era (= 1151 A.D.). The extent of the whole work is mentioned as equal to 1200 grantha (śloka).<sup>16</sup> The MS. of the work is dated Monday, the 13th of the dark fortnight of Aśvina, Samvat 1486 (1429 A.D.) when king *Dungarasimhadeva* was reigning at Gopācala (Gwalior). The copy was made for *Yaśahkīrtideva* the pupil of *Guṇakīrti* the pupil of *Sahasrakīrti*, the successor of Ācārya *Bhāvasenadeva* of Māthurānvaya, Puṣkaragaṇa.<sup>17</sup>

3. *Chhakkammovaesa*<sup>18</sup> Sk. *Ṣaṣṭakarmopadeśa* of *Amarakīrti Gaṇi* is a poem in 14 *sandhis* containing 215 *kaḍavakas*. It deals with the sixfold duties of householders, namely worship of god, attendance on the teacher, study of the sacred texts, self-restraint, austerity and charity, with illustrative stories. The poet has given an account of himself both at the beginning as well as at the end of the work, from which we learn that he belonged to the

ताहे कुमरु णामेण तणूरुहु । जायउ मुहपहपहयसरोरुहु ।

विणयविहूसनभूसियगतउ । मयमिच्छत्तमाणपरिचत्तउ ।

घत्ता-णाणू अवर वीयउ पवर कुमरहो हुअ वरगेहिणि ।

पउमा भणिय सुअणहिं गणिय जिणमयरय बहुणेहिणि ॥ १६ ॥

तहे पारुहणु णामेण पट्टअउ । पठमु पुत्तु णंगयणु सुरूवउ ।

वीयउ साखहणु जो जिणु पुज्जइ । जसु रूवेण ण मणहरु पुज्जइ ।

तइयउ बालेभणि जाणिज्जइ । बंधवसुअणहिं सम्माणिज्जइ ।

तुरियउ जायउ सूपट्टु णामें । णाबइ णियसर दरिसिउ कामें ।

एयहं णीसेसहं कम्मक्खउ । जिणमयरमहं होउ दुक्खक्खउ ।

15 बारह सयइ गयइ कयहरिसइ । अट्ठोत्तरइ महीयले वरिसइ ।

कसनपक्खे अगहणे जायए । तिज्जदिवसे ससिवादि समायए ।

16 बारह सयइ गंधह कयइ पट्टडिण्हि रवण्णउ ।

जणमणहरणु सुहवित्थरणु एउ सत्थु संपुण्णउ ॥ १७ ॥

17 संवत् १४८६ वर्षे अश्वणि वदि १३ सोमदिने गोपाचलदुर्गे राजा-हंगरसीहदेव-विजयराज्य-प्रवर्तमाने श्रीकाष्ठासंघे माधुरान्वये पुष्करगणे आचार्य श्रीभावसेनदेवास्तत्पट्टे श्रीसहस्रकीर्तिदेवास्तत्पट्टे श्रीगुणकीर्तिदेवास्तत्स्थितेन श्रीयशःकीर्तिदेवेन निजज्ञानावरणीकर्मक्षयार्थं इदं सुकुमालसामिचरित्रं लिखापितं ॥ कायस्थ याजनपुत्र थलू लेखनीयं ।

18 MS. dated संवत् १८८४ का भादवा मासे शुक्लपक्षे तिथौ २ शुक्लासरे is deposited in the Digambara Jain Mandir, Agra. Another MS. dated V.S. 1558 is deposited at the Chaubial Jain Temple at Chanderi in Gwalior State.

illustrious line of teachers of the Māthura Saṅgha, the succession list of which starts with Amiyagai (Amitagati)<sup>19</sup> who was succeeded in order by Śāntisena, Amarasena, Śrīsenā, Candrakīrti and Amarakīrti the author. The teacher Amitagati appears to be no other than the famous author of *Dharmaparikṣā*, *Subhāṣitaratnasandoha* and various other works, who flourished at the time of King Munja (1050 V.S.). Amarakīrti calls him 'the delighter of the king's mind by his virtues', and the reference may be to King Munja himself. Similarly, he describes Śāntisena, the successor of Amitagati, as a teacher 'to whose feet the king bowed'. The poet tells us that his patron of letters was Ambāprasāda<sup>20</sup> of the Nāgara family and the son of Guṇapāla and Carciṇī. Ambāprasāda has also been called "the victorious banner of the Kṛṣṇapura family".<sup>21</sup> The poet dedicates his work to this Ambāprasāda whose name is mentioned at the end of each Sandhi.<sup>22</sup> The

- 19 अमियगइ महामुणि मुणिच्छामणि आसि तित्थु समसीलधण ।  
 विरइयबहुसत्थउ कितिसमत्थउ सगुणार्णदियणिबइमणु ॥ ५ ॥  
 गणि संसिसेणु तहो जाउ सीसु । गियचरणकमलणामियमहीसु ।  
 माहुरसंघाहिउ अमरसेणु । तहो हुउ विणेउ पुणु हयवुरेणु ।  
 सिरिसेणु सूरि पंडियपहाणु । तहो सीसु वाइकाणणकिसाणु ।  
 पुणु विक्खिउ तहो तवसिरिणिवासु । अस्थियणसंघबुहपूरियासु ।  
 परवाइकुंभिवारणमइंदु । सिरिचंदकिति जायउ मुणिदु ।  
 तहो अणुउ सहोयरु सीसु जाउ । गणि अमरकिति णिहणियपमाउ ।

- 20 तामण्णहिं दिणि विहियायरेण । जायरकुल्लगयणदिणसेरेण ।  
 चण्णिणि-गुणवालुहं णंदणेण । अवदिण्णदाणपेरियमणेण ।  
 घत्ता-भव्वयणपहाणं बुहगुणजाणं बंधवेण अणुजायइं ।  
 सो सूरि पवित्तउ लहु विण्णत्तउ भत्तिएं अंबपसायइं ॥ ६ ॥

(संधि १)

- 21 अंबपसायइं चण्णिणिपुत्तं । गिहछक्कम्मपवित्तपवित्तं ।  
 गुणवालुहु सुएण विरयाविउ । अवरेहिं मि णियमणि संभाविउ ।  
 (संधि १४, कव. १८)

- 22 अमरसूरि तव्वयणाणंतरु । पयउइ गिहि छक्कम्मइं वित्थरु ।  
 सुणि कण्हपुरबंसविजबद्धय । गियरूवोहामियमयरद्धय ।

- 23 सो लोइ धुणिज्जइ साहु भणिज्जइ अमरकितिपयणिहियमणु ।  
 वज्जियकुवियप्पउ हयकंदप्पउ अंबपसाय सु(कु)सीलहणु ॥  
 (संधि १, घत्ता १)

णंदउ णिरु तावहिं सत्थु इहु अमरकितिसुणिविहिउ पयत्तं ।  
 जावहिं महि-मारुव-मेरु-गिरि-गहयल्लु अंबपसायणिमित्तं ॥ १८ ॥

इय छक्कम्मोवएसे महाकइसिरि-अमरकिति-विरइए महाकव्वे महाभव्व-अंबपसायाणुमण्णिण  
 तवदाणवण्णणो णाम चउइसमो संधी परिच्छेओ समत्तो ॥ संधि १४ ॥

poet has also called Ambāprasāda as his younger brother,<sup>24</sup> from which it is clear that the poet himself belonged to this family before he renounced the world and joined the order.

The composition of the work is said to have taken place at *Godahaya* in the *Mahiyaḍa* desa of *Gujjar Visaya*,<sup>25</sup> which may be identified with the present town of *Godhra* situated in the *Mahikantha* Agency in *Gujrat*. He has mentioned the time of his composition as Thursday, the 14th of the second fortnight of *Bhādrapada* in V.S. 1247 (A.D. 1190), and it took the poet one month of ceaseless activity to write out the work.<sup>26</sup> At that time the ruler of *Godhra* was *Kanha* (*Kṛṣṇa*) the son of *Vandiggadeva* of the *Cālukya* family. The names of these rulers are not traceable in the main *Cālukya* line of *Anhilwaḍ*. It may therefore, be presumed that there was some branch line of the *Cālukyas* ruling in *Mahikantha* at that time with their capital at *Godhra*.

*Amarakīrti* has mentioned<sup>27</sup> no less than seven other works composed by him, namely, *Nemināhacariu*, *Mahāvīracariu*, *Jasaharacariu*, *Dhamma caria-tippaṇa*, *Suhāsia-ayaṇa-ṇihi*, *Dhammovaesa-cuḍāmaṇi* and *Jhānapaīu*.

24 गंदउ अंबपसाउ वियक्खणु । अमरसूरिलहुबंधु सुलक्खणु ।

25 अह गुज्जरविसयहु मज्झि देसु । नामेण महीयडु बहुपएसु ।  
णयरायरवरगामहिं गिरुडु । णाणापयारसंपइसमिडु ।  
तहिं णयरु अस्थि गोदहयणामु । णं सग्गु विचित्तु सुरेसधामु ।

तं चालुक्खंसि णयजाणउ । पालइ कण्हणरिंदु पहाणउ ।  
जो बज्जंतरारिविद्धंसणु । भत्तिए सम्माणियछहंसणु ।  
णिवबंविग्गदेव-तणुजायउ । खत्तधम्मु णं दरिसियकायउ ।

26 बारह सयहं ससत्तचयालिहिं । विक्रमसंवच्छरहु विसालहिं ।  
गयहिं नि भइवयहु पक्खंतरे । गुरुवारम्मि चउहिसि बासरि ।  
इक्के मासें इहु सम्मत्तिउ । सहं लिहियउ आलसु अवहत्थियउ ।

27 घत्ता-भक्कयणपहाणे बुहुगुणजाणे बंधवेण अणुजायइ ।

सो सूरि पउत्तउ लहु विण्णत्तउ भत्तिए अंबपसाएं ॥ ६ ॥

परमेसर पइं णवरसभरिउ । विरइयउ णेमिणाहहो चरिउ ।  
अण्णु वि चरित्तु जसहरणिवासु । पद्धडियाबंवे किउ पयासु ।  
टिप्पणउ धम्मचरियहो पयडु । तिह विरइउ जिह बुज्जेइ जडु ।  
सक्कयसिलोयविहिं जणियदिही । गुंफियउ सुहासियरयणणिही ।  
धम्मोवएसत्तहामणिकसु । तह ज्ञाणपईउ वि ज्ञाणसिक्खु ।  
छक्कमुवएसं सहुं पबंध । किय अट्ठ संख सइं सबसंध ।  
सक्कय-पाइय-कब्बय घणाइं । अबराइं कियइं रंजियजणाइं ।

He tells us that he composed the *Jasaharacariu* in Paddhaḍia metre, and it may therefore, be presumed that the language of the work was Apabhramśa. *Subhāṣitaratnanidhi* is said to have been a collection of Sanskrit verses. *Dhammacaria-tippaṇa* was so composed as to make it intelligible even to a dull person. It is not unlikely that this may be a commentary on *Dharma-parīkṣā* of Amitagati. In addition to these, the poet tells us that he composed many other works in Sanskrit and Prākṛit. But, unfortunately, none of these have so far been discovered. Manuscript explorers, particularly in Gujrat, might very well keep an eye for these works of Amarakīrti.<sup>28</sup>

4. *Aṇuvaya-rayana-paiṇu*<sup>29</sup> Sk. *Aṇuvrata-ratna-pradīpa* of Lakkhaṇa, Sk. Lakṣmaṇa is a poem in 8 *sandhis* containing 206 *kaḍavakas* equal to 3400 ślokaś in extent.<sup>30</sup> It deals with the religious vows of the Jaina house-holders. The poet, according to his own statement, completed his work on Thursday, the 7th of the dark fortnight of Kartika in V.S. 1313 (A.D. 1256) after his labours of nine months.<sup>31</sup> He belonged to the *Jāyasa* (Jaiswal) family and the names of his parents were *Sāhula* and *Jaitā*.<sup>32</sup> The patron of the poet was *Kaṇhaḍa* Sādhū of the *Lambakancuka* family who had two sons *Harideva* and *Dvijarāja* and whose father, grandfather and great-grandfather were *Soḍhū Sāhu*, *Amṛtapāla* and *Hallaṇa* respectively.<sup>33</sup>

<sup>28</sup> For more information about the MS. of the work see हीरालाल जैन : “अमरकीर्तिगणि और उनका षट्कर्मोपदेश” in जैनसिद्धान्त भास्कर, भा. २, किरण ३, पृ. ७० आदि, and किरण ४, पृ. १२० आदि ।

<sup>29</sup> The MS. dated संवत् १५९५ वर्षे बइसाव सु० दुइज सोमवासरे is in possession of the writer. For its full description see जैन सिद्धान्त भास्कर, भाग १, किरण ३, पृ. १५५.

<sup>30</sup> सय दुणि छत्तर अत्थसार । पद्धयि छंद णाणापयार ।  
बुज्झहु तिसहस सय चारि गंथ । बत्तीसक्खर णिरु तिमिरमंथ ।  
चहु-दुइय सग्ग पिहु पिहु पमाण । सावयमणबोहण सुद्धाण ।

<sup>31</sup> तेरह सय तेरह उत्तराले । परिगलिय-विक्रमाइयकाले ।  
संवेयरइह सब्बहं समक्खे । कत्तियमासम्मि असेयपक्खे ।  
सत्तमिदिणे गुरुवारे समोए । अट्ठमि रिक्खे साहिज्जजोए ।  
णव मास रयंतें पायडत्थु । सम्मत्तउ कमे कमे एहु सत्थु ।

<sup>32</sup> साहुक्कहो घरिणि जइतासुएण । सुकइत्तण-गुण-विज्जजुएण ।  
जायसकुलगयणविबायरेण । अणसंजमीहिं विहियावरेण ।

<sup>33</sup> इह अणुबयरयणपईउ कम्भु । विरयउ ससत्ति परिहरिबि गम्भु ।  
जो साहु सोहु तहिं पुरपहाणु । जणमणपोसणु गुणमणिणिहाणु ।  
तहो पठ्ठु पुणु सिरि रचणबाहु । बीयउ कण्हडु अडिडुबाहु ।  
सो सुपसिद्धउ मक्खताणु । . . . . .

Kaṇha is said to have been the great minister of king *Āhavamalla* of the *Chauhāna* family ruling at *Rāyavaḍḍiya* situated on the river Jamna.<sup>34</sup> It was at this town that our poet also dwelt. *Āhavamalla*'s father and other ancestors were *Śrīballāla*, *Jāhaḍa*, *Abhayapāla* and *Bharatapāla* respectively. *Bharatapāla* had his capital at *Chandavāḍa* on the Jamna. *Hallaṇa* is said to have been the chief in the council of king *Bharatapāla*. His son *Amṛtapāla* was the minister of king *Abhayapāla*, while *Soḍhu* was the minister of king *Jāhaḍa* and after him of his successor *Śrīballāla*.<sup>35</sup> *Āhavamalla* is said to

- पिया तस्स सल्लक्खणा लक्खणइढा । गुरूणं पए भत्ति काउं वियइढा ।  
 \* \* \* \* \*  
 घत्ता-तासु सुलक्खण विहियकुलक्कम अणुगामिणि तह जणमहिय ।  
 तहि हुव वे णंदण णयणाणंदण हरिदेउ जि दिउराउ हिया ॥ ९ ॥  
 \* \* \* \* \*  
 सिरिलंबकंचुकुलकुमुयचंदु । करुणावल्लीवणधवणकंदु ।  
 \* \* \* \* \*  
 कण्हडु वणिवइ जणसुप्पसिद्धु । अहमल्लरायमहमंतिरिद्धु ।  
 34 इह जडणाणइउत्तरतडत्थ । महणयरि रायवड्डिअ पसत्थ ।  
 \* \* \* \* \*  
 तहिं णरवइ भाइवमल्लपउ । दांरइसमुदुत्तरणसेउ ।  
 \* \* \* \* \*  
 दुण्णिच्छ-मिच्छ-रणरंगमल्लु । हम्मरिवीरमणणट्ठसल्लु ।  
 चउहाणवंसतामरसभाणु । सुणियइ ण जासु भूयबलपमाणु ।  
 \* \* \* \* \*  
 तहो पट्टमहाएवी पसिद्ध । ईसरवे पणयणि पणयबिद्ध ।  
 \* \* \* \* \*  
 घत्ता-तहिं पुरे कइकुलमंडणु दुण्णयखंडणु मिच्छत्तत्ति ण जित्तउ ।  
 सुपसिद्धउ कइ कव-क्खणु बोहवियक्खणु परमयराएं ण छित्तउ ॥ ४ ॥  
 35 इह चंदवाडु जमुणात्तडत्थु । दंसिय-विसेस-गुण-विविहवरथु ।  
 \* \* \* \* \*  
 भूवाडु तत्थ सिरिभरइवाडु । णियदेस-नाम-णररक्खवाडु ।  
 तटिं लंबकंचुकुलगयणभाणु । इल्लणु पुरवइ सव्वहं पहाणु ।  
 णरणाइसहामंडणु जणिदु । जिणसासण-परिणइपुण्णसिद्धु ।  
 तहो अमयवाडु तणुरुहुउ हूउ । वणिपट्टंकिअभालयलरूउ ।  
 णरवइसमज्जसररायहंसु । महमंतधवियचउहाणवंसु ।  
 सो अभयवाकणरणाहरज्जे । सुपहाणु रायवावारकज्जे ।  
 \* \* \* \* \*  
 देहरुडु तासु सिरिसाहु सोडु । जाइवणरिंद सहमंतपोडु ।  
 घत्ता-संभूयउ तहो रायहो लच्छिस्सहायहो पडसु जणमणाणंदणु ।  
 सिरिबल्लालु णरेसर रूबे जियसर सुद्धासउ महणंदणु ॥ ७ ॥

have behaved heroically in battle against the *Mlecchas* by which term is presumably meant here the Muhammadans. He is also said to have extricated the thorn from the mind of *Hammīravīra*. It is possible that we have here a reference to this king's help to *Hammīradeva* of Raṇathambhor against the onslaughts of the Muhammadans. Hammīradeva was killed in battle in A.D. 1299, i.e., 43 years later than the composition of the present work (1256 A.D.). Or, if we amend the available text a little, reading 'Naddha' in place of 'Naṭṭha' and take Hammīra as the Sanskrit and Prakrit equivalent of *Amīra*—a Muhammadan chief—the text may be taken to mean that Āhavamalla was a constant thorn to the Muslim ruler.

The *Rāyavaḍḍiya* and the *Candavāḍa* mentioned in the work may be identified with the modern *Raibhā* and *Chandwār* near Firozabad in the Agra district of the United Provinces. The present work is thus important, besides its language and other subject-matter, for bringing to light a whole line of the rulers of the Chauhāna family ruling near Agra during the 13th century.

5. *Nemināhacariu*<sup>36</sup> of Lakhamadeo Sk. Lakṣmaṇadeva is a poem in four *sandhis* consisting of 83 *kaḍavakas*. It describes the life of Neminātha the 22nd Tīrthamkara. In the colophons<sup>37</sup> to the sandhis the poet mentions himself as the son of *Rayaṇa* (Ratnadeva). In the introductory part of the poem he gives a few more details about himself.<sup>38</sup> Here we are

<sup>36</sup> The MS. dated सं. १५१० वर्षे मार्गशीर्ष वदि १० is deposited in the Terapanthi Barā Digambar Jaina Mandir Bhandār at Jaipur.

<sup>37</sup> इय णेमिणाहचरिए अबुहकइ-रयणसुभ-लक्ष्मणपुत्रेण विरइए भव्वयणमणाणंदे णेमिकुमार-संभवो णाम पढमो परिच्छेउ समत्तो ।

<sup>38</sup> मालवयविसयअंतरि पहाणु । सुरहरिभूसिउ णं तियसठाणु ।  
 णिवसइ पठणु णामइं महंतु । गोणंतु पसिहु बहुरिद्धिबंतु ।  
 आराम-गाम-परमिउ चणेहिं । णं भूमंणु किउ णिमयदेहिं ।  
 जहिं सरिसरवर चउदिसि रवण । आणंदियपहियण तडि णिसण्ण ।  
 जहिं चेईहर मणहर विसाल । णं मेरुजिणालय सहियसाल ।  
 तिहुवणमंदिरगिह मणिविहार । फेडिय एयंतणयंधवार ।  
 जहिं पढमु जाउ बावरणसार । जो बुहयणकंडाहरणु चार ।  
 सिद्धंतिय जइवर दुअइं तत्थ । जहिं भवियण लीइय मोक्खपंथ ।  
 जहिं णिच महोच्छह जइणेहि । कय भवियहिं भवभासंकिएहिं ।  
 तहिं णिवसइ रयणंगरुहु भव्बु । परणारिसहोयक गल्लिमगब्बु ।  
 लक्ष्मणामइं तहिं वणउपुत्तु । लक्ष्मणपुट णामें विसयहिं विरत्तु ।  
 पुरबाव महिसउरतिलउ णाणि । सो अहिणिसि लीणउ जइणवाणि ।



told that in the Mālava (Mālwa) country was situated a town called *Gonanda* which was in a very flourishing condition. It was a great seat of Jainism and a resort for highly learned monks. One noteworthy point mentioned about the town is that "Here was produced that essence of grammar which became the ornament to the throats of the learned." Possibly it means that an important work on grammar was written there by some writer and the work became popular amongst scholars. It was in this town that Lakhamadeo was born of Ratnadeva in the *Purvāḍa* family. He turned out to be very pious and learned and decided to utilise his talents in composing the work. In the ending *kaḍavaka* of the work we again find mention of his *Pauravāḍa* family. He is here said to be well-to-do in wealth and family and possessing a charming personality.<sup>39</sup> In addition to this we are told here that the author began his work on the 13th of the bright fortnight of Āṣāḍha and completed it on the 13th of the dark fortnight of Caitra.<sup>40</sup> The composition of the work thus took eight months and a half. Unfortunately, we are not told the year in which this composition took place. The MS. of the work which I examined records<sup>41</sup> that it was a gift made on the 10th day of the dark fortnight of Mārgaśīrṣa in Samvat 1510 (A.D. 1453). The work may thus have been composed any time before that.

घत्ता-तहिं जोयउ वइरायउ अवलोएविणु भवगइ ।

तं किञ्जइ हिउ अत्थु जेण जीउ ण मइगइ ॥

\* \* \* \* \*

किं बहुबुद्धिए जि ण रयमि गंधुं । किह बुह रंजमि जाणमि अणत्थु ।

\* \* \* \* \*

<sup>39</sup> पउरवाड-कुल-कमल-दिबायर । विणयवत्तु संवेहासायर ।

धण-कण-पुत्त-अत्थसंपुण्णउ । आइसरावउ रुवरवण्णउ ।

तेण वि कियउ गंधु अकसायहु ।

<sup>40</sup> आरंभित असाढसियतेरसि । भउ परिपुण्ण चइतवदि तेरसि ।

पढइ सुणइ जो लिहइ लिहावइ । मणवंछियउ सोक्खु सो पावइ ।

° ° ° ° °

<sup>41</sup> सं. १५१० वर्षे मार्गशीर्ष वदि १० श्री मूलसंघे सरस्वतीगच्छे बलात्कारगणे भ. श्री पद्मनन्दिदेवास्तत्पदे भ. श्री शुभचन्द्रदेवास्तत्पदे भ. जिनजन्द्रदेवाः श्री पद्मनन्दिशिष्यमुनिमदनकीर्ति तत्शिष्य ब्र. नरसिंह । गोरानिया गोत्रे सं. उधरणभार्या सं. हेमा अजमेरा पुत्री साष्ठी कोढी इदं शार्ङ्ग पात्राय दत्तं ।

## AN OLD BILINGUAL (PERSIAN—URDU) POEM

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### The Manuscript

IN connection with the Rauḍaṭu'sh-shuhaḍā, Rauḍaṭu'l-'Uqbā and Rauḍaṭu'l-Anwār by Walī of Vellore, we had mentioned two more Urdu doublets, the Panḍ-namā (1000/1592) and the Asāsu'l-Muṣallā (1004/1596), which rank with the earliest ones known so far.<sup>1</sup> We discuss here an old poem<sup>2</sup> of the same nature, though technically to be called a qaṣīḍa. Every verse of it ends with 'r' and is in the eight-footed 'rajaz' metre. This poem, namely the "Ṭu'ḥfa-i-Naṣāyiḥ" (= a Gift of advice), is bilingual in the sense that it had been originally in Persian, but has an interlinear translation—though by a different poet—in Urdu verse as well. It opens with these lines :—

۱) حمد سے بگرم ہے مدد، مرخانی بن دیشہر کردہ مصطفیٰ آسمان، ہم اختران شمس و قمر  
دولت صفت میں ہے گنت، اس خالق بن بشر نزد ہا کر آسمان رکھیا، صبح ستار ہر چند  
۲) عظمت بادہ مرش نا، نیز ز پایش طائرے چوں برق، سالے چار صد آن گرسد پادگر  
یوں دی بزرگی مرش کوں، بچھی لکے یک کھتے جوں برق، برسان چار سو آپنے بڑاں پادگر

And the colophon runs as follows :—

کامل شد کتاب مستطاب . . . من تصنیف حضرت مولوی، زبدۂ دوستان مصطفوی، نقادۂ خاندان  
مرفوضی، قطب الدین والاسلام، تیر برج شریعت (شائع علیہ السلام)، حاجی ظلمت، ناہی بدعت،  
مسی حضرت شاہ راجہ جمال - من یدر اعتقاد البیاد جوامیاں مہمدوی

This shows that the poem was composed by the saint Sayyid Shāh Rājū Qaṭṭāl and written by the scribe Jiwā Miyān 'Mahḍawī'. But he was the author of the Persian work only, as the Urdu version was done by some Quṭbī or Rāzī, as the following verses of the translation denote:—

<sup>1</sup> See the *Ma'arif*, January 1940.

<sup>2</sup> I am obliged to Mr. Hamīdūr-Razzāque, Chief Translator, Nagpur, for kindly lending me the MS. It has got this poem in 64 ff. and each page generally contains about 13 verses, but the total number is 1,572, as we shall see later. Copies of this poem are found in the India Office, Hyderabad, etc.

۱۔ ہوش جاں میں یس کیا، کیا بُرائی کی جو بھی  
 ۲۔ بنیاد میں سب کم تر بندہ رازی تخلص قلب کا

The author of the Persian work ("Rāju Qaṭṭāl", being the title) mentions his name and the purpose of the poem in the following verses, which we copy here along with their Urdu version:—

- (۱) غریب یوسف گداور و غلط سخن پند ز  
 برے ہی یوں یوسف گدا پندیں کہنا تا ناخصل  
 (۲) آن کر کن دیں از علم خود مورواد و رکھنا  
 یارب گرداں بچاں پندیر از من اینست در  
 یارب کر بر مقبول یوں منت کریں اتنی قید  
 (۳) از تو بخوایم ہر او علم و عمل تقویٰ و دوح  
 ساکت گداؤں آن چنان چولا نہ باشد کہ  
 ساکت کر یوں جس جوت کے ادنا پیچھے دیا گدا  
 (۴) از صدق دل خواہم ز تو یارب بگرداں پندیں  
 سب سے گویا بشنوم خیم جہانے پیش در  
 (۵) اخلاص میں تجھ پا س میں وں کہ یارب نہ مانگے  
 پند سے گویم عدا زین بشنوم ہر بائے زمین  
 (۶) ایسے کہوں پند میں بھیں ہر باب سن بھتے تب  
 خفہ نصیحت نام میں کز دم زرق دارم و جب  
 (۷) پندوں کا خفہ ناگوار اُسیدت تے یوں دھروں  
 یارب بغیر لطف خود گرداں چناں میں خفہ را  
 یارب پس کے پیار تے سزا توں اس تھے نویں

In these verses the following points are to be noted:—(a) The first verse shows that the author of the Persian work was Yūsuf and not Yūsuf Gaḍā, as Dr. Etche thinks,<sup>4</sup> because "gaḍā" (meaning a beggar) is, in my opinion, a conventional name used by the poet for himself and is not a part of his name. (b) The work, as the first and the fifth verses denote, was written for the author's own son Abu'l-Faṭḥ,<sup>5</sup> better known as "Gesū-Ḍarāz" of

<sup>4</sup> Mr. Shamsullah Qādiri's *Urdu-i-Qaḍīm*. p. 68, but our MS. does not contain these two verses.

<sup>5</sup> *India Office Catalogue*, p. 136.

<sup>6</sup> The writers of *Rauḍaṭu'l-Auliya* (Tr. 'Abdu'l-Majīd, p. 73), *Khazina-i-Asfiya* (Vol. p. 366), etc., say that this poem was written for Gesū Ḍarāz, but his 'Kunya', "Abu'l-Faṭḥ" could not be found in any book.

Gu'lbara (Deccan), who died in 825/1422 and who is more famous than his name-sake Ḥaḍraṭ Ru'knu'd-Dīn Abu'l-Faṭ-ḥ<sup>6</sup> (d. 735/1335), whose equality the author wishes from God for his son in the second verse. (c) In the sixth and seventh verses the work is named as "Tu'ḥfa-i-Naṣāyih" (=a Gift of advice).

### The Authors

The author of the Persian work is a prominent figure amongst the Indian saints, but, unfortunately, there is much difference of opinions regarding his dates. According to Maulānā Āzād Bilgirāmī, this saint started from Delhi on the 20th Ramaḍān, A.H. 725 (=Friday, the 30th August, A.D. 1325), along with his family, and, after four months, reached Ḍaulatābad (Deccan), where he died on the 5th Shawwāl,<sup>7</sup> A.H. 731 (=Friday, the 12th July, A.D. 1331) and was buried close to it at Khu'ldābād. The writer of *Khazīnaṭu'l-Aṣfiyā* (Vol. I, p. 367) gives the date of his death as 774/1372, but even the latter is wrong, because the saint completed this poem of 45 cantos and 786 verses on Monday, the 10th of Rabi II, A. H. 795 (= the 23rd February, A.D. 1393), as its last lines show:—

ابیات گفتم جنگی مقصد بران ہشتاد و شیش  
چالیس پر بھی چار بیس پوچھ آ پر  
عاشربریع آنسری وقت ضعی، روز قمر  
دوران رنج آخری، وقت ضعی، دن تعالیٰ

So, about the date of his death this much is certain that he died after 795/1393. Now, as for the details of his gnosis it is agreed upon by his biographers that having had the full command in religious knowledge he studied spirituality under Ḥaḍraṭ Naṣīru'd-Dīn "Chirāgh-i-Ḍihlawī",<sup>8</sup> (d. 757/1356) and thus being the follower of the "Chishṭiya" order he also became his "Khalīfa" (= spiritual descendant). It was because of this relation that he has praised his spiritual leader thus:—

<sup>6</sup> His accounts are found in *Firishṭa*, Vol. II, pp. 411–12. In *Khazīnaṭu'l-Aṣfiyā* (Vol. II, p. 51) the date of his death is 735, but in *Firishṭa* (Vol. II, p. 411) the date of his father's death is recorded as late as 776/1374.

<sup>7</sup> *Rauḍaṭu'l-Auliya* (Tr. p. 73) and *Masāliku's-Salīkīn* (Vol. II, p. 441, Agra edn.). The latter adds that he started from Delhi in 724 and that he had been a courtier of Ghiyathu'd-Dīn M. Tughlaq (d. 725/1325).

<sup>8</sup> This is the date of his death in *Firishṭa* (Vol. II, p. 399), but from p. 416 (*ibid.*) we know that in A.H. 772 Sayyid Jalāhuddīn came to see him at Delhi. His full name Naṣīru'd-Dīn Maḥmūd is found on the same (latter) page as in the verse quoted.

مع شیخ المشایخ العالمین قطب الکین نصیر الحق والقرین قدس سرہ العزیز  
 (۱) شیخ منظم پتیبہ محمود آل صاحب تیسراں چوں او نہ باشد پنج کس ہم مقنن ہر مشہر  
 شیخ منظم پتیبہ محمود دو صاحب ہاں جوں دو اسے نہیں رگوئی یں ہاشم ہر مشہر  
 (۲) عالم عالم پورا و ہرگز نہ دیدہ مردے اندر کرامت مثل او نیستہ دجا دور قمر  
 عالم مل سوں جو کہ دو ہرگز نہ دیکھا آدمی ہر بھی کرامت میں جوں دو ہو دجا کمال قمر  
 (۳) او بود شیخ مقتدا اورا جہانے وقت بدی گشتند اسی ساکاں چوں رفت آن صوبے  
 دو شیخ سے یک مقتدا سار جہاں استی اندھے ہوئے سب اکاں جواد گیا کمانظر

His tomb at Khulḍābād is still visited by huge crowds every day and the title<sup>9</sup> "Qaṭṭāl" (a great killer) is believed to have been given to him because of his 'fiery' spirituality, which commands the phenomena so much so that no bird can pass over his grave and if any one does, like one turtle-dove which is buried close to him, it would instantly die. Such is the people's belief and is exaggerated even more.

About Quṭṭbī or Rāzī, the author of the Urdu version, nothing is known, except that he was a contemporary of the Su'ltān 'Abdu'llāh Quṭṭb-Shah<sup>10</sup> (1035/1625-1083/1672) and that he completed his work in 1045/1635, as the following verse shows:—

ہجرت تے دس سال ہر علیہ علیہ بیانی تھے تب یہ مرتب سب ہوا غلطہ سود گئی نامور

### The Scribe

Now something is to be said about the scribe "Jiwā Miyān", who gives his father's name as Faqīrullāh in the colophon of the attached work of our MS., containing the famous 90 Letters<sup>11</sup> by Mu'ṣṭafā (d. 984/1576), a very prominent worker of the 'Mahḍawī' mission. Amongst the followers of the 'Mahḍawī' sect (the scribe being one of them) the "Tuḥfa-i-Naṣāyih", the poem under discussion, seems to have been very popular, as it is referred to in Āḍhīn's "Risāla-i-Rāg", written in 1181/1767:—

<sup>9</sup> There is one more saint of this title (see *Fīrshā*, Vol. II, p. 417).

<sup>10</sup> *Urdu-i-Qaḍīm*, p. 67.

<sup>11</sup> In the colophon of those letters the scribe calls himself "Sag-i-āshāna-i-qargāh-i-muṣannif" (= a dog at the threshold of the court of Mu'ṣṭafā), and this term suggests that his father is the same man who copied *Baḥrū'n-Nukūl* by 'Abdu'llāh in 1236/1821 and is the seventh direct descendant of Mustafā (see the *Oriental College Magazine*, Part I, Nov. 1940, p. 75). This eventually means that our scribe copied the MS. after 1236/1821.

بھی تختہ انصاف دیکھو سو کیا ہے، دیکھو دیوان حافظ سو کیا دکھاتا

تختہ میں ہر پروکھیا سو کھل نہیچہ دیکھو دیوان حافظ میں کھل نہاوتا

And this popularity seems to have been misused by the scribe, as he adds two verses himself to the following lines of the 3rd canto :—

دق ۳۱ از ہر جزوہ زندگان بہر ہند صدقہ یادما گرد مذاہبے دوریشاں یا بند راحت بیشتر  
 بیستے توہیں کے کارتے خیالات یا مانگے ما ان کے مذاہباں دور ہوں پاؤں گراحت بیشتر  
 (۲) مشکل جو کاسے مرتزا آید گئے، میرواں نما مغر بہادت داں عا، دارد دعا ماں اثر  
 مشکل کھل کچھ کام تھوہو جیگا گردونگت دعا مغر بہادت سہ دعا، دھرتے دعا خاصا  
 (۳) دانی قیامت را نشان جمال، دیگر داہم میسی فرد آید، کشد جمال را از پشت غر  
 جان قیامت کے نشان جمال ہور سہی داہہ جمال کوں مار سہی یاں میسی اوپے آئے گئے  
 (۴) یا حج با ما حج ہم پیدا شو ناند جہان سر ہائے بعضے آسان باشند بعضے یکا شہر  
 یا حج ہور ما حج بھی دنیا میں پیدا ہوئیں گے بعضاں کے سر آسان لگت بعضے کھلا شہر

After the second verse the scribe puts a caret and in the margin writes the following two verses in Persian :—

ہندی بیایسے شک دولے وارو مصلطفے تصدیق او فرستے ہاں اغار او باشد کفر  
 ہندی بود فرزند ناگتہ میسے بر ہم پنہن او پس ناں آید نقیس ملے چو دھنچ دگر

In my opinion these two verses were certainly added by the scribe himself, because (a) they do not contain their (interlinear) Urdu translation, which means they were not in existence at the time of the translation and (b) the year 905/1499, which is given in the second verse for the appearance of the "Mahdī", is not found in any authentic tradition of the Holy Prophet.

Now we turn to the 45 cantos of the poem, which contain 786 verses and they are as follows :—

(1) The praise of God, the Holy Prophet and the author's spiritual leader Khwāja Naṣīru'd-Dīn "Chirāgh-i-Dihlawī", and also some bits of advice; (2) religion; (3) religious beliefs; (4) knowledge and its virtues; (5) ablutions; (6) prayers; (7) Zakāt (religious income-tax) and charities; (8) fast; (9) pilgrimage, journey and religious wars; (10) recitation of the

Holy Qu'r-ān, other prayers and requiem; (11) livelihood and contentment; (12) marriage; (13) the propriety of bringing a wife; (14) eating; (15) drinking; (16) wearing clothes; (17) sleeping; (18) selling and purchasing; (19) moving in the society of kings and rich people; (20) culture, manners and consultation; (21) following the good traditions of the ancestors; (22) compliments, talks, advice, etc.; (23) jealousy, malice and pride; (24) sincerity; (25) fear of and hope in God; (26) thanksgiving and patience; (27) repentance and piety; (28) miserliness and generosity; (29) good behaviour with and doing good to people; (30) endurance and anger; (31) enforcing the ordained and condemning the disdained; (32) permission for song, music and ecstasy; (33) different games; (34) sacrifice of animals; (35) months, seasons and days which are auspicious and otherwise; (36) old age and youth; (37) merits of attempts and demerits of lethargy; (38) troubles and condolence; (39) martyrs and martyrdom; (40) poverty and distress; (41) richness; (42) attainment of Paradise; (43) Hell; (44) miscellaneous topics; and (45) a hymn and epilogue.

Under these exhaustive heads necessary religious guidance has been instructed by the saint to his son in order to regulate every walk of life scientifically and in the most natural way, and it is needless to discuss them when they are all based upon the original authorities. But it will be important to quote this *Chishtī's* views about songs, music, etc., for the guidance of the present followers of the *Chishtiya* order of saints, who over-estimate the exact permission about them:—

وہابیہ (۱) اور سماع باشد روا آن کس کہ میر و نفس اور  
ہے بمع اس سننا روا، ہو نفس جیوں اس کا مورا  
جانے بود زندہ درو، و سنے ترا بہتر حذر  
اس کا اچھے جینا جو، نیں تو بہت پرہیز کر

(۱) تا مرنے تو ت بود دھسے مکن اسے جان من  
جو کشت تھے ہوئے یک حالت کو کر لے عجب  
دہ پی (۲) مطلق بدن حرمت غماش نہ منا ہی، بیچ گھر  
تقلیم نے رکھ راگت کے جو منع ہو زائین کہیں  
(۳) دہ طبل ہم حرمت بدایں الا کہ طبل غازیان  
غازیان کے طبلان بلج ہوئی سری حرام ہو کہ طبل  
(۴) دانی غلے زن فوں چوں زہرا آن شہنوی  
ناہو زتاں تے راگ سن جو صول جب گیت  
(۵) اندر سماع چوں شہنوی کس نعرہ آئے ہی زند  
جو مع کون سننے وقت ہا کان نعرے مارتا  
منکر نہ ہوا یہ حال را داں قال و قبل بیشتر  
منکر نہ ہوا یہ حال تے تا بیچ توں اس گیل کر  
طنیر رو ربط، چنگ نے ہلہ حرام ست دھجر  
نے، چنگ، رباب ہو ربط کہے حرام اس غیر  
دھ ہم مزن در بیچ جازہ در عروسی بلے پسر  
دھ نا بجا کس گھر نے، منبل عروسان کے پیئر  
بے شک بیعتی در بلا پر سند زیں کل حسد  
بے شک بلا میں لٹے اسلام تے پرہیز کر  
ہرگز مشنہ سرور باں شاید کہ باشد ازکر  
تا ببول توں ہرگز اسے البتہ او ہوئے ناگر

Language

We have already seen above that the author of the Persian work was fully qualified in all branches of religion and naturally in Arabic as well, but, like the mystic writers of that age, he had a free choice to modify the pronunciation of certain words to fit them in the rhyme; e.g., 'ḥiṣar', (ḥiṣr), 'makar' (makr), 'muqar' (muqir), 'qabar' (qabr), 'qaḍar' (qaḍr), etc. He has also overlooked prepositions and also short syllables in metrical feet, which we can notice in the verses quoted above; and at one place in the last canto he has translated a Hindustani proverb thus:—

کرم ہوس چوں زانہار قمار کبکال چوں کرم  
بر باد شد رفت اس گشتہ نخل ہم سنکسر  
بیوں کی ہوس گیت کو ابر پال نس کی میر پلوں  
از گمنی او اپنی پال ہی تویں ہوں نخل یہ ان تر

About the Urdu translation it will be enough to say that it is in the old 'Deccani' language and therefore contains generally those words which are not common now; e.g., 'apin' (self), 'jauṭ' (like), 'kaḍ' (sometimes), 'ker' (of), 'kila' (alone), 'kubal' (difficulty), 'latakna' (to be proud), 'latpatna' (to be ensnared), 'lorna' (to request), 'luk' (upto), 'thāṇ' (place), etc.



## A NOTE ON CYRUS THE GREAT AND THE BHĀRATA BATTLE

IN the last issue of this *Journal*<sup>1</sup> we have tried to resuscitate the view that Cyrus the Great and Kai Khusrau of the Persian traditions are one and the same person. Further in a previous issue of this *Journal*<sup>2</sup> it has been surmised that the battle which Cyrus the Great fought against the Indians and some other people on the eastern confines of his empire provided the original nucleus round which the *Mahābhārata* epic grew up, and Cyrus may be the Kuru prince Duryodhana. To the arguments advanced there for this view we may add the following, which would also suggest a common source for some of the traditions recorded by the Greeks and the Persians as well as some of the traditions preserved in the *Mahābhārata*.

(1) In the *Mahābhārata* we find that Duryodhana, the Kuru prince, shares the sovereignty with his blind father Dhṛitrāstra. In the *Shāhnāmāh* we find that Kai Khusrau is a joint monarch with his old grandfather Kai Kaus who, during his invasion of Māzandarān was blinded by the White Div.

(2) In the *Mahābhārata* Karṇa, one of the mightiest warriors of the time, is a great supporter of the Kuru prince. In the *Shāhnāmāh* we hear of a powerful warrior and nobleman, Kāran, who was a great supporter of the Kaiyanians, and who played an important part alongside with Kai Khusrau in the war against the Turanian prince Afrāsiyāb.<sup>3</sup>

(3) In the *Mahābhārata* Śalya, the ruler of Madya kingdom, is another great supporter of the Kuru prince. The *Mahābhārata* gives Ārtāyani as

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<sup>1</sup> *Nagpur University Journal*, No. 7, p. 1 ff.

<sup>2</sup> *Ibid.*, No. 6, p. 31 ff.

<sup>3</sup> According to *Shāhnāmāh* Kāran was the son of Kāwā and the ruler of Khāwar. In describing the leaders of the army arranged by Kai Khusrau against Afrāsiyāb, Firdausi speaks of Kāran as follows :

..... greater still, Kāran,  
The fighting-man, victorious everywhere,  
The shatterer of hosts, who ruled Khāwar,  
A world-lord, wary, and imperious.

—*Shāhnāmāh* (Translation by A. G. Warner and  
E. Warner), Vol. IV.

another name of Śalya.<sup>4</sup> Ārtāyani may recall Artabanus who, according to the Greek accounts, was one of the most influential and powerful noblemen during the period of the early Achæmenians. Malcolm has suggested the identification of Artabanus with the mighty Rustam of the *Shāhnāmah*.<sup>5</sup> Zāl is the name of Rustam's father. One wonders if the name Śalya is derived from Zāl.<sup>6</sup>

H. C. S.

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<sup>4</sup> ऋतमेव हि पूर्वोक्ते वदन्ति पुरुषोत्तमाः ।  
तस्मादार्तायनिः प्रोक्तो भवानिति मतिर्मम ॥ ५६ ॥

—*Mahābhārata, Karṇaparva*, Ch. 32, v. 56.

<sup>5</sup> *History of Persia*, Vol. 1, p. 235 ff (John Murray, 1825).

<sup>6</sup> According to the *Mahābhārata* the name Śalya was given to this mighty warrior as he was a terror of the enemy.

सत्यभूतस्तु बाधुर्ना यस्मात्सं युधि मानद ।  
तस्याच्छत्यो हि ते नाम कथ्यन्ते पृथिवीतले ॥ ५७ ॥

—*Karṇaparva*, Ch. 32, v. 57.

## REVIEWS

THE EARLY ARYANS IN GUJARATA. By K. M. Munshi.

This is a monograph in Thakkar Vassanji Madhavji Lecture series, published by the University of Bombay, 1941. Attempt is made here to reconstruct the early history of the expansion of the Aryans in Gujarata from the Vedic and the Paurāṇic sources. According to the learned author the traditions about the Aryans in Gujarata are very much older than the Vedic Daśarājña, the Battle of Ten Kings. These are associated with the Mānvas and the Bhṛguṣ. He regards the Battle of Ten Kings as an aspect of the conflict between the Haihayas, who are identified with the Vītahavyas, and the Bhṛguṣ. This ferocious, ceaseless and protracted war between the Haihayas and the Bhṛguṣ is carried upto the times of Kārtavīrya Arjuna and Paraśurāma. The period assigned for this conflict is 1500 to 1000 B.C. The author on good grounds locates Māhiṣmatī of the Haihaya king Kārtavīrya Arjuna at the place where now stands the town of Broach in Gujarata. The home of Paraśurāma, the chief of the Bhṛguṣ, was Śūrpāraka on the sea-board to the south of Bombay. Thus Haihaya Bhṛgu conflict or at least one of its final stages took place in modern Gujarata and that, as a consequence, both Gujarata and Konkan were occupied by the Aryans.

The author also raises an interesting side-issue, i.e., the historicity of the battle between the Kauravas and the Pāṇḍavas described in the *Mahābhārata*. "There is no reference to any war between the Kurus and Pañcālas or to a single great figure of the *Mahābhārata* or to a later Parikṣit and Janamejaya in the later Vedic literature, the latest part of which must be placed long after any conceivable date of the Bhārata war. Why are these records silent about that devastating conflict? Why is not the Rājasūya Yajña of Yudhiṣṭhira or his coronation referred to in the tediously elaborate ritualistic texts? Why is Kṛṣṇa not spoken of? How is this conspiracy of silence to be explained except by the inevitable conclusion that no such war took place and no such mighty figures lived in fact?" The author concludes that "Janamejaya-Pārikṣita's ancestry is not reliably known and the story of the *Mahābhārata* is a purely imaginary one. A magnificent national epic appears to have been woven into the heroic tales which floated round the memories of the great conflicts which began with Daśarājña and of which the central figure was Paraśurāma." The author himself calls this as a "bold inference". It is more likely, as Dr. Sukthankar suggests, that

Bhṛgu exploits and traditions did not form part of the original *Mahābhārata*, and they had been indiscriminately introduced into the Epic due to its association at a later stage with the Bhṛgus.<sup>1</sup> As we have elsewhere suggested the absence of reference to the Bhārata battle or its heroes in the early strata of the Vedic literature is perhaps due to the fact that the date of this battle itself falls in the late Brāhmaṇic and the beginning of the Upanishad period, i.e., the sixth century B.C.<sup>2</sup>

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<sup>1</sup> "The Bhṛgus and the Bhārata," *Annals of the Bhandarkar Institute*, October 1938.

<sup>2</sup> *Nagpur University Journal*, No. 6, p. 31 ff.; and also *The Poona Orientalist*, Vol. VII, p. 119 ff.

ANCIENT VIJÑAPTIPATRAS. By Jñānaratna Dr. Hirananda Śāstri, M.A., M.O.L., D.Litt., Ex-Director of Archæology, Baroda State, and Government Epigraphist for India (Retd.). Published as Memoir No. 1 of Śrī Pratāpasimha Mahārāja Rājyābhisheka Granthamālā, Baroda State, 1942.

Śrī Pratāpasimha Mahārāja Rājyābhisheka Granthamālā has been started to commemorate the accession to the *gādi* of His Highness the Mahārāja Pratāpasimha Gaekwad, and the intention is to issue from time to time memoirs dealing with cultural movements affecting Western India. We have before us the first publication of this series, dealing with documents which had so far escaped any particular attention of scholars, but which the learned author has now shown to throw useful light on the history of Gujarāt-Kāthiāwad. The author has examined twenty-four *Vijñaptipatras* or epistles of the Jaina sect which were culled by him from scrolls supplied to him by Jaina Munis like Kāntivijaya, Jasvijaya, Puṇyavijaya and Caraṇavijaya. These documents cover a period of two centuries and a half the earliest being written in V.S. 1667 (A.D. 1610) and the latest in V.S. 1916 (A.D. 1859). The first of these, being the most important artistically as well as historically, is connected with the *farmān* or command of Jahāngīr the Mughal Emperor, prohibiting the slaughter of animals during the *Paryushanā* period. Akbar, we know, was very favourably inclined towards the Jains, and under the influence of the Jainācārya Hīravijaya he, in the year 1583 A.D., had made animal slaughter during the *Paryushanā* days a capital offence throughout his vast empire. This tolerant policy of the Great Mogha

was revoked by his successor Jahāngīr. A deputation of the Jainas visited Jahāngīr in 1610 A.D. and secured a new imperial rescript to the same effect. The language of this epistle is Marwāḍī and the editor has added to it a Gujarati as well as English translation.

A very important and interesting feature of these scrolls is that they contain paintings, generally of a high order. For example, the illustrations found in the epistle containing the farman of Jahāngīr were worked by Śālivāhana, the celebrated painter of the courts of Akbar and Jahāngīr. They include two portraits of Jahāngīr and prince Khurram and figures of Jaina monks, etc. The memoir under review contains no less than 28 pictures artistically reproduced, some of them in tricolour.

In an appendix the author has noticed and reproduced "some old Indian letters" from the *Mudrārākṣasa*, from Kṣemendra's works, from the *Mālavikāgnimitra* and from the *Lekhapaddhati*. The last one is of a particular interest being an agreement between a slave girl and her purchaser in V.S. 1288 (A.D. 1231) proving the prevalence of the abominable custom of slavery in Gujrat during the thirteenth century, though this document, according to the author himself, is "extraneous to the subject of the Memoir".

The usefulness of the Memoir is greatly increased by the author's introductory remarks about Jainism, their custom of sending *Vijñaptipatras*, and their methodology for writing and decorating letters, and an index. The learned author and the Baroda State authorities deserve to be congratulated on their successfully drawing the attention of scholars to this source of Indian History hardly tapped before.

H. L. J.

## RĀMGIRI OF KĀLIDĀS

BY DR. T. J. KEDAR, B.A., LL.B., D.LITT., M.L.A.

RECENTLY when I inspected the places of interest on the Rāmṭek hill, I was attracted by the image of Trivikrama, the fifth incarnation of Viṣṇu. The pose of this image which is taken under protection by the Archaeological Department is very interesting. The upper part of the body shows distinctly a militant attitude befitting a person who wants to strike down his opponent. The right leg is raised and then bent down in such a way as to bring the foot on the head of the opponent. The image itself is made of stone which has a dark red appearance. It recalled to my mind the following stanza from the *Meghadūta*.

प्रालेयद्विरेपतटमतिक्रम्य तांस्तान्निवेशान्  
हंसद्वारं शृगुपतियशोवर्त्म यत्कौञ्जरन्ध्रम् ।  
तेनोदीचीं दिशमनुसरेत्स्त्रियगायामशोभि  
श्यामः पादो बलिनियमनाभ्युद्यतस्येव विष्णोः ॥

While exhorting the cloud to enter the heron's hole on its northward journey, the Yaksha asks the cloud to assume the slanting pose of the dark leg of Viṣṇu raised in order to put down Bali. The pose of the leg is described by the expression त्रिर्गङ्गायामशोभि. The image which is on the hill very correctly shows the slanting, transverse length which the cloud is advised to assume. It is clear that the poet realised that the cloud could not enter the heron's hole in an erect condition. The cloud would have to bend down or assume a transverse pose to facilitate its entry into the hole. How would the cloud then look ? The poet uses a simile. Could the simile chosen by him have been only imaginary ? Or was it chosen because some such image of Viṣṇu was before him ? I am inclined to think that the latter theory is more probable. The dark leg of Viṣṇu is there on the hill. The slanting transverse pose of the leg is also there and the length of the leg and the entire appearance of the image are so impressive that the poetic genius of Kālidās could not but have been profoundly influenced by them.

Here is one proof of the association of Kālidās with the Rāmṭek hill. I have seen pictures of the images of Trivikrama and seen some images myself. To the best of my knowledge this is the solitary image of Trivikrama to which the description in the above-quoted stanza from *Meghadūta* so faithfully

applies. It is also a matter of no mean coincidence that the image stands on the northernmost arm of the hill.

There is another remarkable circumstance noticed in Canto VII of the *Raghuvamsha*. The other leg of Vishṇu is referred to in the following stanza :

तमुद्रहंतं पथि भोजकन्यां रुरोध राजन्यगणः सदृप्तः ।

बलिप्रदिष्टां श्रियमाददानं त्रैविक्रमं पादमिवेन्द्रशत्रुः ॥

The assemblage of the insolent kings obstructed, on the way, Aja who was taking away his bride just as Prahlāda obstructed the leg of Trivikrama (Vishṇu) while securing the glory or wealth of Bali. In the image on the Rāmṭek hill, one leg is shown as placed on the head of Bali and the other leg stands on the ground but the hands of a person are holding it—obviously firmly, suggesting the idea of obstruction. Mallinātha in his commentary quotes the following stanza from *Vāmana Purāṇa* :

वैरोचनविरुद्धोऽपि प्रह्लादः प्राक्तनं स्मरन् ।

विष्णोस्तु क्रममाणस्य पादाम्भोजं रुरोधह ॥

Prahlāda who knew what fate awaited his father Hiranyakashipu when Vishṇu attacked him was apprehensive about the life of his grandson Bali and so obstructed the leg of Vishṇu while he was advancing. In the edition of the *Vāmana Purāṇa* available to me, reference is made to Bāṇa, the minor son of Bali who was present on the occasion. I have not been able to decide whether the hand or the hands that held the leg are those of a small boy or a grown-up man. One thing is, however, certain that in one famous work of the poet one leg is described and in another work, the other leg is described. This remarkable coincidence unquestionably establishes the common authorship of the two works but when one remembers that the simile introduced in the *Raghuvamsha* was in connection with the obstruction caused to Aja in Vidarbha and when one also takes note of the fact that Rāmṭek was a part of Vidarbha, the presence of Kālidās in Vidarbha at some part of his life seems more than probable.

It is the presence of the image in front of him that has in all probability inspired the two similes and this fact in my opinion furnishes one more link in the chain of evidence available for establishing that Rāmṭek is the Rāmgiri mentioned in the *Meghadūta*.

Another link in this chain of evidence is furnished by the following description :

त्वय्यायत्तं कृषिफलमिति भ्रूविलासानभिज्ञैः

प्रीतिसिग्धैर्जनपदबध्नूलोचनैः पीयमानः ।

सद्यः सीरीत्कर्षणसुराभि क्षेत्रमारुह्य मालं

किञ्चित्पश्चाद्गज लघुगतिर्भूय एवोत्तरेण ॥

Before the cloud advances beyond the Rāmgiri hill, it is advised to discharge its contents on the ploughed lands of मालम् क्षेत्रम् and then to turn back a little and advance speedily towards the north. . Where is this 'Mālam Kshetram'? Can we locate it somewhere near the Rāmtek hill? If we accept the usual interpretation placed on the word 'Māla' by commentators including Mallinātha, we shall have to say that it describes the plateau of a hill. This does not help us in identification. Moreover, the reference to a mere plateau by a great poet would be meaningless. If the idea was to indicate a mere plateau, why couple it with the word 'Kshetram'? Why should the cloud before leaving Rāmgiri visit the 'Mālam Kshetram'? There must be some propriety or purpose in it. There would be no point in suggesting that there were ploughed lands in the vicinity and they had to be watered. In the whole journey, there were thousands of stretches of ploughed lands in which agricultural operations were carried on. The reference to 'Mālam Kshetram' seems enigmatic. मालम् क्षेत्रम् can be interpreted on the lines on which कौरवम् क्षेत्रम् (Kauravam Kshetram) in stanza 51 of the *Pūrvamegha* has to be interpreted. The latter means कुरुक्षेत्रम्. The former should mean मलक्षेत्रम्, the word मालम् being an adjectival form of मल (Mala), just as कौरवम् is an adjectival form of कुरु (Kuru). मल (Mala) is a name derisively given to Jainas or Bauddhas. If there was a habitation of Jainas or Bauddhas, the place associated with it would naturally be described as मलक्षेत्रम् which is the same thing as मालम् क्षेत्रम् (Mālam Kshetram).

Is there any trace of a place associated with Jainism or Buddhism in the vicinity? There are many Jain temples even to-day in the vicinity of Rāmtek, and there is also a stūpa believed to be Buddhistic just a mile from the Rāmtek hill and to go to it from Northern spur of the hill, one has to go a little to the west or behind the spur. This stūpa is under the protection of the Archaeological Department and I understand that the Department had at one time the idea of excavating it, but later on the idea was given up. This stūpa seems to be within the limits of the modern मनसर (Manasara) village. सर means a lake or a pond if there is no difficulty in reading मन (Mana) as equivalent to मल (Mala) we can safely conclude that मनसर was the former मलसर. ल and न are interchangeable as we know that लहान



is described by villagers as नहान or the word Lambārdar is described as Nambārdar. There is still a pond beyond the stūpa and one can be certain that if there was a habitation of Bhikshūs, there must have been a pond or a tank for their ablutions. The orthodox Hindus would well describe the locality as मलसर which in course of time got corrupted into मनसर. A stūpa implies also sanctity and there is no wonder that the place was styled as मलक्षेत्र which name could be described by the expression मालम् क्षेत्रम् like कौरवम् क्षेत्रम् for exigencies of poetic diction. If this deduction is correct we have got an additional link to connect Rām-giri with Rāmṭek.

There is yet a third link. In stanza 15 of the *Pūrvamegha*, we get the reference of the form of Gopāla assumed by Viṣṇu.

The stanza reads thus:

रत्नच्छायाव्यतिकर इव प्रेक्ष्यमेतत्पुरस्ता-  
द्वल्मीकाप्राप्तप्रभवति धनुःखण्डमाखण्डलस्य ।  
येन इयामं वपुरतितरां कान्तिमापस्यते ते  
बर्हेणैव स्फुरितरुचिना गोपेष्वस्य विष्णोः ॥

The cloud while resting against the top of the Rām-giri hill and adorned with the rainbow is compared with the form of Viṣṇu in the guise of a milkman wearing the crown of peacock's feathers. Evidently the comparison is with Śrī Krishṇa. If a spectator were to see the cloud from the valley below the place of the image of Trivikrama and if we imagine that the cloud was resting against the top of the hill where the present temple of Gopāla is situated, there would be good ground for the above comparison. Anyway we have still the temple of Gopāla near the temple of Rāma, just on the edge of the main hill. It is quite probable that the present image and the temple were rebuilt in commemoration of an old image of Śrī Krishṇa appearing in the form of Gopāla. This would require a further research and more data. Anyway the simile used in this stanza does not seem to have come from poetic imagination only. There was and must have been also an image of Gopāla which occasioned the use of the simile.

I would not like to close this article without a reference to सिद्धागनाः occurring in stanza 14 of the *Pūrvamegha*:

अग्नेः शृङ्गं हरति पथनः किं सिद्धिस्तुन्मुखीभि-  
रुष्टोत्साहश्चकितचकितं मुरधसिद्धागनाभिः ।  
स्थानादस्मात्सरसानिचुलादुत्पतोदुक्कमुखः खं  
दिङ्मगानां पथि परिहरन्मूलं हस्तावलेपान् ॥

The Rāmtek hill is known as the hill of penances (तपोभूमि) and must have been a place of resort for the Siddhas. Another possible idea is that like Yakshas, the Siddhas who are believed to be superhuman beings midway between man and God regarded the hill and its neighbourhood as their favourite haunt. Curiously enough, there is a temple of Siddheshwar to the south of the hill near the confines of the modern village नगरधन, believed to be old नंदिवर्धन. Taking the former meaning as more probable, it is not difficult to imagine an existing habitation of Siddhas who had their hermitages (Ashramas) there. The old temple of Siddheshwar still existing only a mile or two from the hill may throw some light on the description in the above stanza.

## PART II

In my previous articles published in the *Nagpur University Journal*,\* I have indicated the route followed by the cloud on its northward journey from Rāmtek to the Kailās mountain.

The route, according to me, lies over the Satpura hills and ends at Hoshangabad so far as the Central Provinces are concerned. The cloud halts midway between Rāmtek and Hoshangabad, on the top of the Amrakūṣa mountain. According to Wilson and other scholars, this is identical with Amarkanṭak in the Rewa State. This position is untenable because the cloud has to traverse a fairly long distance from there to reach the Narmada.

Stanza 19 of the *Pūrvamegha* which is as follows:

स्थित्वा तस्मिन्वनचरवधूमुक्तकुजे सुद्वर्तं  
तोयोत्सर्गद्वृततरगतिस्तत्परं वर्त्म तीर्णः ।  
रेवां द्रक्ष्यस्युपलविषये विन्ध्यपादे विवांशी  
भक्तिच्छेदैरिव विरचितां भूतिमज्ञे गजस्य ॥

shows that the cloud has to cross the further route (तत्परं वर्त्म) with a quickened pace. The Narmada rises at Amarkanṭak and there is no question of traversing further distance to reach the river.

It appears to me that the place like Amla in Betul District is indicated in the *Meghadūta*. This is practically midway between Rāmtek and the river Narmada. Amla could be read as Amra, the letters ल and र being interchangeable. It is moreover situated on the big plateau of the Satpura

range, its height being between 2,500 and 3,000 feet above the sea-level. The Amrakūṭa mountain is described as सानुमान् (with a spacious plateau).

त्वामासारप्रशमितवनोपलब्धं साधु मूर्ध्ना  
वक्ष्यत्यध्वश्रमपरिगतं सानुमानाप्रकृतः ॥

If the mountain had merely a tapering top, there was no propriety of describing the mountain as having a spacious plateau which as we find to-day is nearly 60 miles in length.

The account of Satpura hills given in the *Gazetteer of Betul District* is very interesting. It says "the name which is modern originally belonged only to the hills which divide the Narbuda and the Tapti valleys. The term Satpura is now, however, customarily applied to the whole range which commencing at Amarkantak runs south of the Narbuda river nearly down to the Western coast. The Satpuras are sometimes, but incorrectly, included under the Vindhya range. Taking Amarkantak as the eastern boundary, the Satpuras extend from east to west for about 600 miles and their greatest depth exceed 100 miles from north to south. The shape of the range is almost triangular. From Amarkantak an outer ridge runs south-west for about 100 miles to Sāleṭekri hills in the Balaghat District, thus forming as it were the head of the range which shrinking as it proceeds westward from a broad table-land to two parallel ridges ends so far as the Central Provinces are concerned at the famous hill-fortress of Asirgarh." It appears from this account that the whole range was known or must have been known as Amrakūṭa range, the name having been taken from the apex of the triangular range. In this view, no difficulty arises as to the location of the mountain on the route taken by the cloud.

All the same, the place of halt is necessary to be fixed. Amla as stated above appears to be the place, it being practically the highest point on this plateau.

The place of halt is characterised by forest-fires which are quenched by the showers of the cloud. It is interesting also to read the graphic description of forest fires given in *Betul Gazetteer* and recorded as far back as 1866 by Col. Forsyth. It says:

"The foliage of the Saleh droops and withers after a few weeks of sunning, and its naked yellow stems then fill the prospect like a vast army of skeletons. But even this stage is not the worst. It continues till the month of April introduces the torrid summer season, when the fierce sun saps up the last particle of moisture in the basaltic regions."

“ Then the grass has become like tinder and a thousand accidents may set it on fire. The traveller dropping a light from his pipe, the wind carrying a spark from an encampment of jungle-hunting Banjaras, the torch of the belated traveller and should it escape these accidents, then the deliberate acts of the graziers who with the first fall of the rain in June, bring herds of cattle into these tracts to graze on the resulting new crop of grass will start a jungle fire which nothing can stop till it burns itself out. Early in the hot season it is a fine sight to watch at night the long creeping red lines of the jungle fires on distant hill-sides. From the hill fortress of Asirgarh the eye ranges over the whole of the upper Tapte-valley and at this season the whole country appears at night ringed with these lines of fire, curving into the curvature of the hills; here, thin and scarcely visible where the grass is scanty on a bare hill-top; there flaring through tracts of long elephant grass or wrapping some dried and sapless tree-stem in immense tongues of flame. By night a ruddy glow colours all the heaven above the spot; while by day a thick pall of smoke hangs over the valley. Near this scene the air is stifling and thick with the falling flakes of ash. Wild animals have fled to the neighbourhood and clouds of insects rise before the advancing flames, to be devoured by myriads of birds collected seemingly from every end of the country. ”

The appearance of forest-fires at the beginning of the hot weather was a phenomenon thus noticed authoritatively nearly 100 years ago, and occasionally is even noticeable now. Could these fires have been on a lesser scale at the time of Kālidās? It was the early rain which quenched the fires and that is why the poet attributes a feeling of gratitude to the mountain in the second couplet of stanza 17:

न क्षुद्रोऽपि प्रथमसुकृतापेक्षयासंश्रयाय ।

प्राप्तेभिन्ने भवति विमुखः किपुनर्यस्तथोच्चे ॥

It shows at the same time how fierce and devastating must have been the forest-fires and what a relief the early showers must have given to the denizens of the forest. The next thing to be noticed is the kind of people who inhabited this region. When the poet described the population at Rāmtek and its vicinity, he used the words सिद्धांगना and जनपदवधू. This indicates that this tract was fairly well-settled and civilized and populated by agriculturists among others. But when he comes to the region of the Amrakūṭa mountain, he finds there वनचरवधू (women belonging to the hill-tribes). Betul District or for the matter of that, the whole of the Satpura plateau, was an uncivilised tract, peopled only by the hill-tribes like Gonds, Bhils and Korkus who are even to-day in preponderance there.

In fact Betul District is the heart of what is known as Gondwana, and seems to have been opened up to civilisation not earlier than 5th or 6th century A.D. The *District Gazetteer* says that as early as Ptolemy (130-161 A.D.) the large district at the head of the Nānagūṇa or Tapti river was occupied by the Kondalis, a name which has been generally identified with that of the Gonds. The river Tapti takes its rise about 20 miles to the south-east of Amla. Amla at one time appears to have been a strong-hold of Gonds. Remains of many old Gond tombs are even found to-day there.

The showers are wanted not for agricultural operations just as they were wanted for this purpose near Rāmṭek but only for extinguishing the forest-fires. The description given in the *Meghadūta* in my opinion, clearly indicates the correctness of the route I pointed out in the previous articles.

## LOCATION OF RĀMAGIRI

BY MAHAMAHOPADHYAYA V. V. MIRASHI, M.A.

IN his well-known lyric, the *Meghadūta*, Kālidāsa describes Rāmagiri as the place where a Yaksha, exiled from the heavenly city of Alakā fixed his residence and from where he sent a message to his distressed beloved at home. The location of this Rāmagiri has long been a matter of controversy. It is therefore proposed to discuss it here in the light of the latest researches.

The theme of the *Meghadūta* being a product of the poet's fancy, we do not get any help for fixing the location of this place from Sanskrit literature as we do in the case of the places mentioned in his other works. We have consequently to rely mainly on the description of the Rāmagiri and the way of the cloud-messenger as given in the *Meghadūta*. Let us therefore see how the poet has described these in that Kāvya.

Rāmagiri was regarded as very holy; for while in exile, Rāma and Sītā had lived there for some time. The hill had a pool of water which had been sanctified by Sītā's ablutions. Its slopes were marked by the venerable foot-prints of Rāma. It is not therefore surprising that several hermitages clustered round it. When clouds came over the hill in the beginning of the rainy season they looked like elephants stooping to butt against a rampart. It abounded in shady trees as well as cane-plants called Nichula. On this hill the exiled Yaksha noticed a cloud on the first day of Āshāḍha. Its sight made his grief of separation unbearable. Realizing that his beloved also might be in a similar plight, he thought of sending a message to her by the cloud. He therefore eulogised it and honoured it with the offerings of Kuṭaja flowers. He then began to describe the way to Alakā. 'On your way to the north,' said he, 'you will, O Cloud ! first have to ascend the table-land (Māla) where fields are rendered fragrant by the operation of the plough. You will then turn a little to the west and again pursue a northerly course. The mountain Āmrakūṭa will next give rest to you on its peak. Having poured out your showers to extinguish its wild fire, you will be able to fly more swiftly. The river Narmadā, whose stream is shattered at the rugged foot of the Vindhya, will next meet your eye. Thereafter you will visit the Daśārṇa country. Having reached its far-famed capital Vidiśā, you will drink the water of the Vetravatī. There the hillock Nichairgiri, the caves of which, rendered fragrant by the perfumes used by courtesans, disclose the licentious youth of the townsmen, will afford you

rest and shelter.' The subsequent way of the cloud-messenger not being necessary for the discussion of our subject need not be described here.

The foregoing description of the Cloud-messenger's way clearly indicates that Rāmagiri lay to the south of Vidiśā. Now, the location of Vidiśā is certain. Archæological excavation has proved beyond doubt that it is identical with modern Besnagar, a village near Bhilsā in the Gwalior State. The river Betwā (ancient Vetravatī) flows by its side. The hillock Nichairgiri now goes by the name of Udayagiri and lies about two miles to the north. It has some old caves well known for sculptures and inscriptions of the Gupta age. The description in the *Meghadūta* therefore plainly squares with the situation of Besnagar. On the way from Rāmagiri to Vidiśā there lay in order the Māla country, the hill Āmrakūṭa and the river Narmadā. We have now to see the situation of which of the several hills said to represent the ancient Rāmagiri answers to the description given in the *Meghadūta*.

Let us first consider the identification of the hill proposed by the ancient commentators of the *Kāvya*. Vallabhadeva, the oldest of them, who flourished in the tenth century A.D., says that Rāmagiri is Chitrakūṭa. He further adds that it cannot be Ṛishyamūka as Sītā did not dwell there.<sup>1</sup> Sthiradeva, who flourished in the same period, remarks that Rāmagiri is a well-known hill in the Daṇḍakā forest, but give no further clue to its identification. Dakṣiṇāvartanātha, who is so garrulous in regard to Diṅnāga and Nichula, is completely silent on this point. Mallinātha, the famous commentator of Kālidāsa's works, has merely reiterated the opinion of Vallabhadeva that Rāmagiri is Chitrakūṭa and later commentators have followed suite. The identification of Rāmagiri with Chitrakūṭa may therefore be said to have been accepted by nearly all Sanskrit commentators.

The reason for this identification is not far to seek. Rāmagiri is nowhere mentioned in the *Rāmāyaṇa* of Vālmīki. The only hills mentioned in the *Rāmāyaṇa*, where Rāma sojourned during his exile are Chitrakūṭa and Ṛishyamūka. Of these, Ṛishyamūka is out of the question; for Rāma visited it after the abduction of Sītā. The description in the *Meghadūta* that Rāmagiri had a pool of water sanctified by Sītā's ablutions plainly indicates that it could not have been Ṛishyamūka. It is not surprising, therefore, that Sanskrit commentators identified Rāmagiri with Chitrakūṭa, the only other hill mentioned in the *Rāmāyaṇa*. But the identification is clearly untenable. According to the description in Vālmīki's epic Chitrakūṭa lay only about ten *krośas* from Bhāradvāja's hermitage which was situated at

<sup>1</sup> 'रामगिरिरत्र चित्रकूटः, न तु ऋष्यमूकः, तत्र सीताया वासाभावात् ।'

the confluence of the Ganges and the Jumnā. It is generally identified with the hill near Kāmtā in the Bāndā District.<sup>2</sup> Chitrakūṭa and Kālañjara were well known in ancient times as sacred and fortified hills which ambitious kings vied with one another to keep in their occupation.<sup>3</sup> The hill near Kāmtā is still well known as a holy place of pilgrimage. It has on it sacred foot-prints of Rāma, Sītā and Lakshmaṇa. But its situation clearly shows that it could not have been Kālidāsa's Rāmagiri, for it is to the north of the Narmadā, not to the south as required. The cloud could not have met the Narmadā, Vidiśā and Ujjainī in its northward journey from Chitrakūṭa. The identification proposed by Sanskrit commentators is therefore clearly untenable.

We shall next turn to the opinions of modern scholars. In his latest edition of Kālidāsa's *Meghadūta*, Prof. K. B. Pathak, the veteran orientalist, identifies Rāmagiri with Rāmgaḍh in the Sargujā State in the Central Provinces. This hill has the well-known ancient caves of Sītābengrā and Jogimārā containing Brāhmī inscriptions of the second or third century A.D. Some of the caves are dedicated to Rāma, Lakshmaṇa and Sītā. There are a few images also collected together in one place, but they do not appear to be very old. On the wall of a cave there appear two foot-prints which are popularly supposed to be those of Rāma. This place is undoubtedly very old, but it is not likely to be Rāmagiri, for it is not to the south, but to the north-east of Amaraṇṭak where the Narmadā takes its rise. If the Yaksha had to send the Cloud-messenger from this place to Vidiśā, he would have asked it to pursue not a northerly, but a westerly course. Besides, the hill is situated in an unfrequented and inaccessible forest tract. Mr. Asit Haldar has very graphically described the difficulties which he and his party had to encounter in reaching the place on elephant-back.<sup>4</sup> Again, there does not seem to be any particular reason why the poet should have chosen this Rāmgaḍh as the place of the exiled Yaksha's residence.

The third hill with which Rāmagiri is identified is Rāmṭek, which lies 28 miles north of Nagpur. This view was first expressed as early as 1813 by Prof. H. H. Wilson in the notes to his *editio princeps* of the *Meghadūta*. In proposing this identification, Prof. Wilson pointed out that the hill was

<sup>2</sup> The *Rāmāyaṇa* states that this Chitrakūṭa lay at a distance of only ten krośas from Bhāradvāja's hermitage which was situated at the confluence of the Ganges and the Jumnā near Allahabad. The hill near Kāmtā is however 65 miles from Allahabad. To reconcile this discrepancy Mr. Partiger suggests that Chitrakūṭa was the name of a range of hills stretching from the river Ken to about 20 miles from Allahabad.

<sup>3</sup> See, e.g., *Ep. Ind.*, Vol. V, p. 194.

<sup>4</sup> *Modern Review* for 1915, pp. 379 ff.



covered with buildings consecrated to Rāma and was periodically visited by numerous pilgrims. The geographical situation of this hill answers to the description in the *Meghadūta*. Just near Rāmṭek begins the table-land of Sātpurā, which was evidently the ancient Māla country described in verse 16 of the Kāvya. This identification of Māla is supported by the statement in a stone inscription from Roṇ that Āchugi II, a feudatory of the later Chālukyas of Kalyāṇī,<sup>5</sup> defeated the lord of Dāhala (*i.e.*, the contemporary Kalachuri king ruling at Tripurī near Jubbulpur) after conquering the Māla country.

After ascending the Māla country the cloud was asked to turn a little to the west and reach the hill of Āmrakūṭa. This hill is generally identified with Amarakaṇṭak, but this view is open to the objection that Amarakaṇṭak is situated not north by west, but north by east of Rāmṭek and does not lie on the way to Vidiśā. Besides, the ancient name of Amarakaṇṭak was Mekala, not Āmrakūṭa. It is well known that the Narmadā which takes its rise at Amarakaṇṭak is called Mekala-sutā 'the daughter of Mekala'. Again, the description in the *Meghadūta* that the cloud after crossing some distance from Āmrakūṭa would see the Narmadā at the foot of the Vindhya mountain, plainly shows that Āmrakūṭa lay at some distance to the south of both the Vindhya and the Narmadā. The identification of Āmrakūṭa with Amarakaṇṭak is therefore impossible. My friend, Dr. D. W. Kathale of Nagpur, suggests that Āmrakūṭa might be Amarwārā, the headquarters of the Amarwārā *tahsil*, which lies almost due north of Nagpur. As it is situated north by west of Rāmṭek, the description in verses 16 and 17 of the *Meghadūta* fits it very well; but Amarwārā is a town, not a hill (*sānumān*) as stated in the *Meghadūta*. Its ancient name might have been Āmravātaka, but it cannot evidently be identical with Āmrakūṭa. About 7 or 8 miles north of Amarwārā, there is however a range of hills which may have borne the name of Āmrakūṭa in ancient times. Rai Bahadur Hiralal has suggested in one of his articles that the peaks of Sātpurā had names ending in *kūṭa* such as Sālakūṭa, modern Sāleṭekri in the Bālāghaṭ District, and Madhukūṭa, Mohtur in the Chhindwāra District. The hill to the north of Amarwārā may similarly have borne the name of Āmrakūṭa.<sup>6</sup>

<sup>5</sup> *Ep. Ind.*, Vol. XIX, p. 227. Prof. Wilson who identified Āmrakūṭa with Amarakaṇṭak thought that Māla was Māldā north of Ratanpur in Chhattisgarh. But the identification is plainly impossible as the place does not lie on the way from Rāmṭek to Besnagar near Philsā.

<sup>6</sup> As the hill near Amarwārā is not exactly to the north of Rāmṭek, but slightly north by west, the description in the *Meghadūta* (v. 16) that the Cloud, after ascending the Māla country would have to turn slightly to the west and then to the north in order to reach Āmrakūṭa exactly squares with the situation of the hill near Amarwārā.

The Narmadā which the cloud met somewhere in the Narsingpur District, presents the scene which the poet has graphically described in verse 19 as resembling the ornamental figures on the body of an elephant.

The geographical situation of Rāmtek is thus exactly as described in the *Meghadūta*. Besides, Rāmtek has, for several centuries, been famous as a holy place. The Riddhapur plates of the Vākātaka dowager queen Prabhāvatīguptā were issued on Kārttika śukla 12 from the feet of the lord of Rāmagiri (*Rāmagiri-svāminah pāda-mūlāt*).<sup>7</sup> This branch of the Vākātaka dynasty was ruling over the northern parts of Berar and the Marāṭhī-speaking districts of the Central Provinces. There is no place except Rāmtek, in this part of the Province, which goes by the name of Rāmagiri. The Riddhapur plates therefore clearly indicate that the hill was then known by the name of Rāmagiri and that it had on it a temple dedicated to the *pādamūlas* or foot-prints of Rāma. Even now, in the temple of Rāmachandra on the hill of Rāmtek there are *pādukās* of Rāma in regular worship. The antiquity of Rāmtek may be traced to still earlier times if the mound at the adjoining village of Mansar which looks like the remnant of a Buddhist Stūpa is excavated. In any case, the hill has maintained its holiness continuously since the age of the Vākātakas; for in a stone inscription<sup>8</sup> in the temple of Lakshmaṇa, which belongs to the thirteenth century A.D., the various temples and *tīrthas* on the hill and in its vicinity are described. Near Rāmtek there is a small village called Nagardhan or Nandardhan, the ancient Nandivardhana, which was once the capital of the Vākātakas.<sup>9</sup> This place is also mentioned in the Deoli plates of the Rāshtrakūṭa king Kṛishṇa III.<sup>10</sup> It retained its old name Nandivardhana down to the time of the Bhonslas, for it is referred to in a Sanskrit play called *Purañjanacharita* composed in the 18th century A.D.<sup>11</sup> Rāmtek and the adjoining places can thus claim high antiquity.

Apart from its geographical situation and antiquity, Rāmtek can be identified with Rāmagiri on the strength of the description given in the *Mēghadūta*. Even now there is a *kuṇḍa* near the temple of Rāma which is shown as the place of Sītā's ablutions. That the hill had sacred foot-prints of Rāma in ancient times has already been shown above. It has still numerous shady trees and in the rainy season it abounds in *Kuṭaja* flowers. When the clouds hang over it in the beginning of the rainy season, they

<sup>7</sup> J.A.S.B., Vol. XXII, pp. 58 ff.

<sup>8</sup> Ep. Ind., Vol. XXV, p. 9 ff.

<sup>9</sup> It is mentioned as the place of issue in at least three grants of the Vākātakas.

<sup>10</sup> Ep. Ind., Vol. V, p. 196.

<sup>11</sup> Sardesai Commemoration Volume (Marāṭhī), p. 148.

appear like elephants engaged in a butting sport. The hill consists of reddish stones which must have easily furnished the Yaksha with the necessary *dhāturāgas* for drawing a picture of his beloved.

The tradition that Rāma and Sītā dwelt on this hill seems to be very old. The name of this hill does not, of course, occur in the *Rāmāyaṇa*, but that is because the Epic does not give a detailed description of all the hermitages where Rāma dwelt during his sojourn for ten years in the Daṇḍakāraṇya. Besides, the hill is said to have acquired this name after Rāma began to dwell on it, in response to the request of Śambūka. The *Rāmāyaṇa* names the hill of Śambūka's penance as Śaivala and the description it gives of it suits Rāmṭek. This very name Śaivala is mentioned as the old name of the Rāmṭek hill in the *Rāmaṭeka-māhātmya*. The place where the Śūdra ascetic Śambūka was beheaded by Rāma is still shown on the hill. A Śiva-linga was installed there and it still exists under the name of Dhūmreśvara.<sup>12</sup>

Let us next consider what led Kālidāsa to choose Rāmagiri as the place of the exiled Yaksha's residence. Several scholars now believe that the great poet flourished at the court of Chandragupta II—Vikramāditya in *circa* A.D. 400. The two royal families of the Guptas and the Vākātakas became matrimonially connected about that time; for Chandragupta II gave his daughter Prabhāvatīguptā in marriage<sup>13</sup> to the Vākāṭaka prince Rudrasena II in *circa* A.D. 395. The earliest copper-plate grant of the Vākātakas so far discovered is that of Prabhāvatīguptā. The charter was issued from Nandivardhana while she was acting as regent for her minor son Divākara-sena.<sup>14</sup> Two other charters granted by her second son Pravarasena II, which have recently been discovered in the Central Provinces were also issued from Nandivardhana. They are dated in the second and eleventh year of his reign.<sup>15</sup> All subsequent charters of Pravarasena II's reign are, however, issued from Pravara-pura which shows that he later on founded the city of Pravara-pura and shifted his capital there. As stated before, Nandivardhana is identical with Nandardhan (also called Nagardhan), now a small village near Rāmṭek. Owing to its proximity to the Vākāṭaka capital, Rāmṭek (ancient Rāmagiri) must have become well known at the time. From the

<sup>12</sup> This Śiva-linga is mentioned as Dhūmrāksha in the stone inscription of the time of the Yādava king Rāmachandra which still exists, though in a mutilated form, in the temple of Lakshmaṇa on the Rāmṭek hill. See *Ep. Ind.*, Vol. XXV, p. 17.

<sup>13</sup> The marriage seems to have taken place after Chandragupta's extermination of the Western Kshatrapas which Vincent Smith places in A.D. 395. *J.R.A.S.* for 1914, p. 317.

<sup>14</sup> *Ep. Ind.*, Vol. XV, p. 39 ff.

<sup>15</sup> *Ibid.*, Vol. XXVI, p. 155 ff. and Vol. XXIV, p. 260 ff.

prominence given to the Gupta genealogy in both the charters<sup>16</sup> of Prabhāvatīguptā which have been discovered so far, it has been rightly surmised that Gupta influence was at its highest at the Vākāṭaka court during the time of Chandragupta II. Perhaps he had deputed some trusted and experienced officers of his court to assist his daughter in governing her kingdom during the minority of her son Divākarasena. It would not therefore be wrong to suppose that Kālidāsa also visited the Vākāṭaka capital during this period and stayed there for some time. This conjecture gains support from the tradition recorded by an old Sanskrit commentator that by the order of *Mahārājādhirāja* Vikramāditya Kālidāsa composed the Prākṛit kāvya *Setubandha*<sup>17</sup> for the sake of *Māhārāja* Pravarasena. This Pravarasena is none other than Pravarasena II, the daughter's son of Chandragupta II, Vikramāditya. For the composition of this kāvya of fifteen cantos, Kālidāsa must have stayed at Nandivardhana for some years. It is easy to surmise that the theme of the *Meghadūta* must have suggested itself to the great poet when he visited Rāmṭek and that he must have composed that kāvya while in Vidarbha. This explains why he made the exiled Yaksha, the hero of that kāvya, choose Rāmagiri (modern Rāmṭek) as the place of his residence.

The foregoing discussion must have made it plain that Rāmṭek near Nagpur is the ancient Rāmagiri described as the place of the Yaksha's sojourn in the world-famous kāvya *Meghadūta* of Kālidāsa. To commemorate this the Kālidāsa Memorial Committee of Nagpur has decided to erect a pillar on the hill. Its foundation stone was laid by Dr. T. J. Kedar, Vice-Chancellor of the Nagpur University, on the occasion of the celebration of the bimillennium anniversary of the Vikrama samvat on Kārttika śukla pratipad (Saturday, the 30th October 1943).

<sup>16</sup> One of these is the Poona grant (*Ep. Ind.*, Vol. XV, p. 39 ff.) and the other the Riddhapur grant (*J.P.A.S.B.*, Vol. XX, p. 53 ff.). In both these grants Prabhāvatīguptā gives the genealogy of the Guptas from Ghaṭotkacha, the founder of the Gupta family, while she refers to the Vākāṭakas only in connection with her husband, Rudrasena II.

<sup>17</sup> *Setubandha* (Nirṇayasāgara Press ed., 1935), p. 3. See also the colophon of the 11th canto of that kāvya.

## SOME OBSCURE PASSAGES IN AŚOKAN INSCRIPTIONS

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IN a paper, "Chronology of Aśokan Inscriptions,"<sup>1</sup> we had thrown some new light on the knottiest problem presented by the Aśokan Inscriptions, namely the expression व्यूढेन and the figure 256 found in the Minor Rock Edict. We have suggested therein that the expression व्यूढेन is the Prākṛit form of व्युष्ट, which signifies dating and the figure 256 represents dating in terms of Buddha Nirvāṇa Era. In this paper we are re-examining some other obscure passages in Aśokan inscriptions.

(1) In the third Major Rock Edict Aśoka issued orders, when he had been consecrated twelve years, for quinquennial tours by his various officers for the dissemination of his moral teachings along with other administrative purposes. Girnar text of this Edict is given below for easy reference:

“देवानंपियो पियदसि राजा एवं आह द्वादसवासाभिसितेन मया इदं आमपितं सर्वते विजिते मम युता च राजूके च प्रादेशिके च पंचसु पंचसु वासेसु अनुसंयानं नियातु एतयेव अथाय इमाय धंसानुसंस्थिय यथा अजाय पि कंमाय साधु मातरि च पितरि च सुसूसा नित्रासंस्तुतजातानं बाम्दणसमणानं साधु दानं प्राणानं साधु अनारंभो अपव्ययता अपभाडता साधु परिसा पि युते आजपयिसति गणनायं हेतुतो च व्यंजनतो च”

The passage—“परिसा पि युते आजपयिसति गणनायं हेतुतो च व्यंजनतो च” at the end of this Edict is “one of the most knotty passages from Aśokan Inscriptions”, and various interpretations have been given to it. For example, Vincent Smith translated it as follows: “The Council also will inculcate on the officials in the Accounts Department, with regard both to the principle and the text of the order”. Vincent Smith’s rendering of गणनायं as the Accounts Department has not been correct. This expression like the similar expression in the Queen’s Edict signifies “registering or keeping record of”. Moreover, as Vincent Smith himself suggested, “it must be confessed that the connexion of the final sentence with the rest of the document remains obscure, and some improvement in the rendering may be hoped for.”<sup>2</sup>

<sup>1</sup> *Journal of Indian History*, Vol. XVII, Part 3.

<sup>2</sup> *Aśoka*, p. 163 (3rd. Ed.).

Hultzsch translates this passage as follows: "The council of (Mahā-mātras) also shall order the Yuktas to register (these rules) both with (the addition of) reasons and according to the letter."<sup>3</sup> Bhandarkar translates it as follows: "The council (of ministers) shall order the Yuktas in regard to the reckoning (of accounts) both according to the specification and according to the object." In elucidating this passage he further remarks, "We have seen that Aśoka asks his officers to preach the development of the virtues of *alpa-vyayatā* and *alpa-bhāṇḍatā*. But how was it to be determined that this people were developing these homely virtues? It was, therefore, necessary that some of his officers should make a house-to-house inspection and count how much of expense and how much of goods each householder had incurred or accumulated. But it was impossible to lay down one inflexible rule for all households. So the Parishad was ordered to advise them as each difficulty arose, so as not to violate the text (*vyamjana*) or the object (*hetu*), of the king's orders. Bhandarkar further observes, "This passage is susceptible of another interpretation. The third important word here is *gaṇanā*, which occurs in the form of *gaṇayati* and *gaṇiātha* in the Queen's Edict, where it obviously signifies "to register (a grant)". This meaning also suits here excellently. Whosoever, being inspired by the king's *dhammānusāsi*, makes a grant shall have that grant registered by the Yuktas, both by recording the name (*vyāṇjana*) of the donor and his object (*hetu*). This is exactly in consonance with the import of the Queen's Edict."<sup>4</sup>

Mukerjee like Bhandarkar translates this passage as follows, "The Council will also similarly instruct the Yuktas for purposes of accounts in accordance with my order and its grounds." He also suggests, "The *gaṇanā*, as has been very aptly suggested by Dr. D. R. Bhandarkar, might refer to the accounts of each household which should be examined by the Yuktas to see how far they conformed to the principle of moderation in both spending and saving (*apavyayatā apabhāṇḍatā*) laid down by the emperor.

"We may also refer in this connection to the principle of Public Finance laid down by Kauṭilya (II. 6), which requires the Collector-General, *Samāhartā*, to see to the increase of revenue by taxation and decrease of expenditure by checking the spending authorities and by retrenchments. Perhaps Aśoka had some such principle in view in this passage in his edict."<sup>5</sup>

<sup>3</sup> C.I.I., Vol. I, p. 5.

<sup>4</sup> *Aśoka*, p. 301 ff. (2nd Ed.).

<sup>5</sup> *Ibid.*, p. 135 f.

The explanations of this last passage in the Third Rock Edict as given by Hultzsch, Bhandarkar and Mukerjee<sup>6</sup> are not yet very convincing. The connection of the final sentence with the rest of the Edict remains obscure. The following translation and interpretation of this passage which I am suggesting may fit in better and make the last sentence an integral part of the Edict as a whole.

“The Parishad (the Council of Ministers) shall order the Yuktas to register (*i.e.*, to keep a record of the tours by the officials mentioned in this Edict itself) giving the objects and the specifications (*i.e.*, place, date, etc., of these tours).”

According to this order of Aśoka the Council of Ministers was made responsible for keeping a careful account of all these tours undertaken by the various officials. This also, perhaps, made the Council of Ministers responsible for the execution and the supervision of the orders of the Emperor regarding these tours by the various officials. In Kautilya's *Arthaśāstra* along with other duties the Mantri-Parishad (the Council of Ministers) was to start the work that was not begun, to complete what was begun, to improve what was accomplished, and to enforce strict obedience to orders.<sup>7</sup>

(2) In the Sixth Pillar Edict Aśoka refers to the efforts he had made for the moral upliftment of the people near and far. The following is the Text of the Edict:

देवानंपिये पियदसि लाज हेवं अहा दुवाडसवसअभिसितेन मे धंमलिपि लिखापिता लोकसा हितसुखाये से तं अपहटा तं तं धंमवडि पापोवा हेवं लोकसा हितसुखे ति पटिवेखामि अथ इयं नाति सु हेवं पतियासने सु हेवं अपकठे सु किंम कानि सुखं अवहामी ति तथ च विदहामि हेमेवा सवनि काये सु पटिवेखामि सवपासंढा पि म पूजितो विविधाय पूजाया ए चु इयं अतना पचूपगमने<sup>8</sup> से मे मोख्यमते सडुबीसतिवसभिसितेन मे इयं धंमलिपि लिखापिता

The sixth sentence in the Edict, *i.e.*, “ ए चु इयं अतना पचूपगमने से मे मोख्यमते,” again presents one of the very obscure passages in Aśokan Inscription. This and the one preceding and the following passages are differently translated as follows:

“All denominations are revered by me with various forms of reverence. Nevertheless, personal adherence<sup>9</sup> to one's own creed is the chief thing in my opinion.”—Vincent Smith (*Aśoka*, p. 208).

<sup>6</sup> We have not referred to the translation and interpretation of this passage by the earlier scholars as they were wide of this mark.

<sup>7</sup> Book I, Ch. XV.

<sup>8</sup> अतना पचूपगमने is perhaps equivalent to आत्मना प्रत्युपगमनम्.

<sup>9</sup> Following Senart, Vincent Smith renders “अतना पचूपगमने” as “personal adherence” Böhler translated it as “the approach through one's own free will”.

"And all sects have been honoured by me with honours of various kinds. But this is considered by me (my) principal duty, viz., visiting (the people) personally."—Hultzsch (*C.I.I.*, Vol. I, p. 129).

"All sects I have honoured with various honours; but voluntary advances (to a sect) are considered by me as the chief thing."—Bhandarkar, *Aśoka*, p. 35).

"All sects are also honoured by me with various offerings. But that which is one's own approach (or choice) is considered by me as the most essential."—Mukerjee (*Aśoka*, p. 185).

In the explanations given above of this part of the Sixth Pillar Edict, we find that the expression "ए च इयं अतना पचूपगमने से मे मोख्यमते" does not appear to be integrally connected with the rest of the passage. This expression obviously may indicate some phase of Aśoka's own attitude towards the various religious sects. I offer the following translation and interpretation of this passage:

"I have honoured all the sects in various forms. But (my own) personal approach (to these sects) is considered by me as the most important thing (in my relation with these religious sects)."

In this connection we may recall Aśoka's religious tours mentioned in the Eighth Rock Edict when Aśoka began meeting the Brāhmaṇas and the Śramaṇas and thus directly acquainting himself with their teachings. This personal contact with the various religious sects subsequently developed into Aśoka's very close relation with the Buddhist Saṃgha and his very intimate knowledge of the teachings of Buddha. I have elsewhere<sup>10</sup> expressed the view that it was during the last ten years of his reign that Aśoka's leanings towards Buddhism greatly increased and he developed into an ardent Buddhist. Prior to this during the phase of reaction after the Kalinga war he tried not only to patronise the various religious sects alike, but, perhaps, also tried hard to understand their tenets by personally meeting the followers of different religious sects and having discussion with them regarding their religion. The passage of the Sixth Pillar Edict under discussion, perhaps, reflects this phase of Aśoka's mental development.

(3) In the Seventh Pillar Edict, which is in general clearly intelligible, after Aśoka's enumeration of the various works of public utility constructed by him as was also done by the previous kings, we have the following slightly obscure passage:

"इमं च धंमानुपदीपती अनुपदीपजंतु ति एतदया<sup>11</sup> मे ।"

<sup>10</sup> "Chronology of Aśokan Inscriptions," *Journal of Indian History*, Vol. XVII, p. 3.

<sup>11</sup> एतदया may be construed as "etad-yathā" as by Michelson or as "etad-arthāya" as by Hultzsch. Either of these gives the same sense.



This passage is translated as follows:

“By me, however, with the intent that men may conform to the Law of Piety, has it been done even as I thought.”—Vincent Smith, *Aśoka*, p. 210.

“But by me this has been done for the following purpose, that they might conform to the practice of morality.”—Hultzsch, *C.I.I.*, p. 135.

“But that the people might strictly follow the path laid down by Dharma, was this thus done by me.”—Mukerjee, *Aśoka*, p. 189.

“But I have done this with this intent, namely, that (they) may practise (such) practices of Dharma.”—Bhandarkar, *Aśoka*, p. 353.

The implication of this passage is that Aśoka undertook these works of public utility not only with the intention of benefiting the people but also that others may follow his example and may be encouraged to give charities for such purposes. The subsequent passages of this very Edict make it clear how such acts of charities were encouraged amongst his own relatives, and the people also followed his example in this matter just as they followed his other moral ideals. This is borne out by the following subsequent passage of the Edict:

“यानि हि कानिचि ममिया साधवानि कटानि तं लोके अनुपदीपंते तं च अनुविधियंति” ।

## A SURVEY OF THE PROBLEMS RELATING TO FOOD PRODUCTION IN C.P. AND BERAR

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IN the Presidential Address delivered before the Section of Agricultural Sciences of the 31st Session of the Indian Science Congress held at Delhi in January, 1944, some aspects of the present and post-war food production have been dealt with on an all-India basis, and the present article deals with the problems of food production with special reference to this Province.

### *Present-day Position of Food-Production in C.P. and Berar*

On the basis of the 1939-40 figures, area under cereal crops in our Province comes to about 13.9 million acres from which we can ordinarily expect a gross outturn of 3.89 million tons. Allowing about 0.25 million tons for seed purposes, the quantity available for human consumption comes to 3.64 million tons.

Taking the latest census figures, the population in terms of adult individuals (two children under 12 years of age being roughly considered to be equal to one average adult individual for this purpose) comes to 13.45 millions and this at the rate of  $1\frac{1}{2}$  lbs. of cereals per head per day would require 3.29 million tons, thus showing a surplus production of 0.35 million tons, but if a greater reliance for the required calorific value is to be placed chiefly on cereals (as evidenced by diet surveys), and  $1\frac{3}{4}$  lbs. is allowed per head per day, the amount of cereals required will come to 3.83 million tons, i.e., a deficit of about 0.19 million tons.

It may be mentioned here that factors like seasonal fluctuations, wastage during processing, transit and storage, quantity of food grains consumed by poultry, agricultural and other animals, etc., have not been accounted for in the above calculation.

It will thus be seen that while our Province is not in the same predicament as shown by the position of India as a whole, there is a clear necessity to increase our food production to better the existing dietary standards of the people and at the same time supply quantities of grain to other parts of India.

*Suggestions to Ensure Immediate Maximum Food Production by dealing effectively with Major Controllable Factors Affecting Production*

*Soil water.*—(1) Government is offering concessions for digging wells and the amount earmarked for this purpose is to be spent in certain proportions in the cotton and non-cotton tracts. This procedure may not, necessarily, give the best results as it is well known that water table in the cotton tracts is generally very deep and construction of wells becomes a costly affair and even when they are constructed, irrigation therefrom is laborious and costly. If on the other hand, a survey of the shallow water table areas is made and the available amount spent in these areas, the scheme is likely to be more successful and ensure better production than in its present dispersed or extensive form. A systematic survey with a view to obtaining a fuller and more accurate information about the water tables of the various districts should therefore be carried out for this purpose.

(2) One of the main reasons for our low average yields of unirrigated crops is inadequate soil moisture at certain critical periods of crop growth together with the factor of unchecked soil erosion. Nothing so far appears to have been done to conserve soil fertility by checking erosion which also would naturally ensure greater conservation of soil water. Various regions or tracts should therefore be surveyed for this purpose and comprehensive schemes for the construction of bunds and drains should be drawn up. In so far as our Province is concerned, the problem is particularly important in the black cotton soil tracts where the fields suffer very badly from erosion and the consequent loss of fertility and power of the soil to withhold moisture. This work will have to be carried out by survey parties specially appointed for this purpose who should conduct a general survey of the selected tract or tracts and a contour survey of certain badly undulating fields if necessary. To start with, we may select a stretch of badly affected area and if this work is continued for some years, we would be in a position to deal with the whole eroded cropped area in the black cotton soil tract. It is estimated that a party consisting of one surveyor, one agricultural assistant and two *jamadars* will be able to deal with an area of 2,000 acres per year costing about Rs. 1-8-0 per acre. An anti-erosion scheme on a modest scale should therefore be put into operation as a Provincial undertaking.

In this connection it may be mentioned that a good deal of success has already been achieved in the Bombay Presidency by adopting bunding schemes in certain black soil tracts of the Sholapur and Bijapur districts. The Government of Bombay, it has been recently reported, is undertaking a 5-year plan of reclaiming and developing 15 million acres at a cost of

Rs. 15 crores. The scheme includes problems like soil conservation, dry farming, afforestation, terracing, irrigation of areas to enable them to be double cropped, etc.

With the help of the information made available by these surveys, it would also be possible to better utilise a part of the enormous present run-off that goes to waste, to determine the possibilities of extending irrigation by bunded tanks and to exploit water from the rivers to a maximum possible extent.

*Soil utilisation.*—(1) In the Berar cotton tract there is good scope to divert a lot of area representing the commonly called *bardi* or *khardi* soils (light and shallow soils) from cotton to cereals like *juar* and *bajra* grown either singly or in mixture with *mung* and *urid* depending upon the moisture-holding capacity and depth of the soils and converting certain heavier types of *morand* soil from cotton to wheat. Older records show that there was considerably more acreage under wheat in Berar in the past than at present.

(2) What applies to the cotton tract of Berar, applies also to some extent to certain parts of the Nagpur, Wardha and Hoshangabad districts. The rainfall in these districts being heavier and the soils in many places being of the heavier and deeper type, there are good possibilities of diverting an appreciable acreage from cotton to wheat, the former crop not always faring very well.

A large area of *khardi* soil can also be profitably diverted from cotton to *juar* which will ensure more food for the cultivator and more fodder for the cattle. *Juar* can be grown either singly or in mixture with *mung* and *urid*.

In this connection it would be of interest to note the causes underlying the higher outturns per acre of food crops in China as compared to those obtained in India. It was mentioned by the members of the Chinese Agricultural Mission (at the meeting of the Board of Agriculture in India held at Baroda in 1943) and Dr. Richardson who was on deputation to China (at a conference of agricultural chemists held at Delhi in 1943) that the Indian agriculturist unlike the Chinese is evidently utilising a large part, if not all, of his good land, available manure and labour for growing money crops, while comparatively poorer land is being used for the production of food crops, with comparatively less manure. This practice has gone on enlarging the differences that originally existed in the land under money crops and food crops with the result that while the land under money crops increased in capacity and productivity, the productivity of the land under food crops has either decreased or remained stationary.

(3) There is also a definite scope of taking a second crop of wheat or gram after early groundnut depending upon soil and rainfall conditions.

(4) The practice of using a somewhat higher seed-rate for *juar* should be adopted in order to avoid unnecessary waste of *kadbi* stalks which when a lower seed-rate is adopted are naturally thick and are not utilised by the cattle to the full extent. In the life-history of the *juar* plant, soil moisture plays a very important part in maintaining turgidity of plant cells when the head is about to emerge. If the seed-rate is low, the plants are robust and the size of the heads is also fairly big and the plants therefore require a lot of moisture from the soil to enable them to throw out the heads. Rainfall at this critical period is therefore essential for the proper emergence of the ears. If on the other hand the seed-rate is increased, the plants will not be so thick and the heads comparatively smaller with the result that the heads will be thrown out with a somewhat lower percentage of moisture in the soil. The plants will thus not be so dependent on a small amount of rainfall which is otherwise necessary at this critical period. There is no appreciable difference in the yield of grain or *kadbi* by increasing the seed-rate. On the other hand a higher seed-rate will reduce the chances of risk mentioned above and help in better utilisation of fodder.

(5) In order to introduce the crop or crops according to the nature of soil types, effective propaganda must obviously be the first step followed by enactment of Crop Control Act. If and when the Crop Control Act is to be brought into force, the cultivators must be assured reasonable prices for the food crops in relation to the prices of non-food crops and other articles representing essential needs of the cultivators.

It may be mentioned here that by the introduction of Crop Control Act preceded by effective propaganda the Baroda State has achieved the object of bringing more than  $\frac{3}{4}$  of the total cotton area under standard cottons, and within 2 years it is expected that all but some 50,000 acres in Kathiawar would be under the improved standard cotton. Adequate funds for the purpose of enforcing the Act are however absolutely essential to achieve the desired object.

*Soil fertility.*—Since the measures adopted during the year 1943–44 to increase soil fertility have been able to cover only a small fraction of the whole area, these should be adopted on a much wider scale as indicated below to ensure immediate maximum production:—

(1) *Rice tract.*—In the coming season *sann*-hemp seed for green manuring paddy should be distributed on a much wider scale. The work of seed distribution should be taken in hand immediately so that the seed will be

sown in time after the first monsoon showers, thus ensuring maximum growth period and yield of green material per acre. Last year's experience has shown that depending upon the time of sowing (which varied from tract to tract as the work of seed distribution was started rather late) yields varying from 5,000 to 10,000 lbs. of green material equivalent to approximately 15 to 30 lbs. of nitrogen per acre were obtained and on a modest estimate, this should increase the outturn of paddy of the green manured areas by 25 to 40%.

Utilisation of *sann* seed for green manuring paddy on a wider scale would also give a fillip to the *sann*-hemp fibre industry in this Province. There is a good scope to increase the area under *sann* in the Chhindwara and Betul districts. Areas situated on the banks of the Kanhan river in the Nagpur district would also be suitable for this purpose because (a) in this tract there is a considerable acreage under paddy which could utilise *sann* seed for purposes of green manure and (b) the water of this river not being muddy is well suited for the production of a good quality clean fibre.

Along with the question of supplying nitrogenous manures in larger quantities to the rice cultivators, the question of establishing bone crushing industry is also of urgent importance as out of the various cereal crops grown in this Province, rice gives an outstanding response to applications of phosphatic fertilisers. If this industry is established in the Province, it is estimated that finely crushed bonemeal would be available at Rs. 3-8-0 to Rs. 4 per maund as against the present reported price of Rs. 6 to Rs. 7 for material obtained from other provinces which import raw bones from this Province for purposes of crushing.

Experiments conducted under the Rice Research Scheme have definitely shown that while applications of soluble nitrogen at the rate of 20 lbs. per acre raise the outturn by 50%, a combination of nitrogen and soluble phosphoric acid at the rate of 20 lbs. each, increases the outturn by 109% and the profits calculated according to the prices prevalent in 1939-41 in respect of the variety Budhiabako were Rs. 4-13-0 and Rs. 13-6-0 respectively.

Efforts should also be made to encourage utilisation of oil-cakes as manure within the Province. In the Madras Presidency, large sums have been made available for this purpose and an elaborate plan has been drawn up for the distribution of 2,50,000 tons of Madras-grown oil-cake.

*Manufacture of ammonium sulphate in the country.*—Another aspect of increasing soil fertility which demands immediate attention is the question of procurement of adequate quantities of ammonium sulphate. The importance of this fertiliser in increasing crop production has been established

beyond doubt. Steps should therefore be taken without any delay either to produce this fertiliser in the country or obtain adequate supplies from U.S.A. under the lease and lend arrangements till a plant is set up for its manufacture. It is understood that in the opinion of the manufacturing chemists, it would be easier and cheaper to manufacture ammonium nitrate than ammonium sulphate. If this is so, all available supplies of the latter should first be utilised for manuring paddy, which crop particularly requires this fertiliser and use the nitrate on other food crops.

(2) *Wheat tract.*—What has been said above regarding the green-manuring of paddy areas applies generally (because the beneficial effects of green-manure on wheat are dependent upon the amount of rainfall received after the green crop is incorporated with the soil and before the subsequent wheat crop is sown) to the wheat areas also. Last year's experience has shown that yields of green material varying from 8,000 to 15,000 lbs. equivalent to approximately 24 to 45 lbs. of nitrogen per acre were obtained. Judging the results of a large number of green-manuring experiments conducted with unirrigated wheat, we should reasonably expect increased outturns of the order of 10 to 30% as a result of green manuring, provided instructions contained in the departmental pamphlet regarding the incorporation of green material with the soil positively before 15th August were strictly followed.

(3) *Rice, wheat and juar tracts.*—Greater attention has to be paid to the question of preparation of compost from field wastes and town refuse, and for this purpose intensive propaganda will have to be made by increasing the staff adequately. Preparation of compost manure from night-soil and town refuse must be taken up very enthusiastically and the municipalities may even have to be compelled to do this work to prevent the colossal loss of soil fertility which is at present occurring due to the neglect of these valuable materials.

It is estimated that if all the *katchra* and night-soil available in a town with a population of about 25,000 is converted into compost, as much as 2,000 acres of land can be manured annually at the rate of 1 ton compost (containing about 17 lbs. of nitrogen) per acre. Thus if this work is carried out by 30 to 40 major municipalities in this Province and the compost prepared by them is applied to the land producing food crops, we should expect an immediate increased production of the order of at least 3,000 to 4,000 tons per year. In the long run it may not be found necessary to manure the soil every year but possibly once in two or three years, thus enabling us to either double or treble the manured area and proportionately the production of food as well.

**Rotation.**—Taking the figures of acreages under various pulse crops (4·6 million) and of the population (12·4 million adult individuals) in the year 1939, the position was that there was a deficiency of about 3,600 tons of pulses (*dal*) (on the basis of the prescribed minimum intake of 3 ozs. per adult individual per day) and the cereal protein: legume protein ratio for the Province was 2·8 as against the prescribed adequate ratio of 1·80. Recent figures for the year ending 31st May 1941, show that the total area under pulse crops has dropped down to about 4·02 million acres and the population has increased to 13·45 million adult individuals indicating thereby that there is a greater deficiency of legumes in the Province to-day than that calculated on the basis of the figures available in 1939.

The position of legumes in relation to the nutrition of cattle is also somewhat similar to that described above in regard to human nutrition.

It is therefore highly necessary to raise the acreage under pulses to a considerable extent in this Province in order to provide a properly balanced and adequate protein diet for man and beast. Diet surveys have already shown that legume consumption in our Province is far below the prescribed minimum. This appears to be more due to the inadequate purchasing power of the people than to the lack of taste for legumes. Due to the present fixation of ceiling prices at Rs. 7 per maund in case of *juar* while the gram and *tur* pulses are being sold in the market at Rs. 16 to Rs. 20 per maund, legume intake would now in all probability be further reduced, relative prices of *juar* and gram and *tur* pulses in the past being in the neighbourhood of Rs. 3-8-0 to Rs. 4 and Rs. 6 to Rs. 7-8-0 per maund respectively.

An instance recorded in respect of bacon in England shows that in 1940 although an allowance of 4 ozs. per head was made, many people could not afford to buy it and tons of it had been destroyed and a similar situation had also arisen in respect of butter.\* It is thus evident that in order to enable the average individual to obtain a balanced ration, prices of essential articles of diet will have to be so regulated as to fit the average income, otherwise there is every danger of accentuating the existing state of under-nutrition as well as malnutrition. This naturally involves the larger question of establishing a balance between not only the relative prices of essential commodities but also the prices of non-food crops and food crops.

Some methods of increasing production of legumes in the Province are mentioned below:—

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\* *Politics of Food*, by G. Darling.



(1) *Cotton zone*.—(a) To encourage the mixed cropping of *juar* (*Sorghum vulgare*) with a legume like *mung*, *urid* (*Phaseolus* sp.) or cowpea on a much wider scale than at present practised.

(b) To increase the existing percentage of *tur* (*Cajanus indicus*) in the cotton fields.

(c) To encourage the practice of cotton-*juar*-groundnut rotation.

(2) *Rice zone*.—To increase the existing area under *kodo* (*Paspalum scrobiculatum*) and *tur* mixture and to extend the practice of *utera* (rice followed by a legume) where possible.

(3) *Wheat zone*.—To encourage and extend the practice of mixed cropping with wheat and gram in areas where it is either practised on a small scale or not practised at all.

*Seed distribution*.—The schemes of seed distribution that are at present in force in the rice tract will no doubt be able ultimately to tackle a much larger area than what has hitherto been possible with the help of our demonstration farms and plots only. There is however a still greater need to multiply these schemes in the Province. A great majority of the cultivators are somewhat unwilling to obtain the seed on the existing *taccavi* loan system. They prefer instead to take the loan in kind and return back the seed on the *sawai*  $1\frac{1}{4}$  system. This is cited as an important reason why the cultivators are reluctant to take advantage of the present schemes of seed distribution and prefer instead to obtain the seed on loan in kind from the *malguzars*. Now that the Government has adopted the policy of procuring food grains, it would be very useful if this system of issuing and recovering loans from the cultivators in kind is introduced. It will be welcomed by the cultivators and would help to increase stocks of improved varieties required for distribution. An increase in the staff of the Department of Agriculture and provision of adequate storage facilities are essential for this purpose.

*Diseases*.—An organisation on the lines of the Bureau of Plant Protection with extension services for disease control as established in the U.S.A. should be set up. Similar organisation is also reported to exist in Germany which deals effectively with the diseases of potato. The diseases of food crops which require to be effectively controlled in our Province are the smuts of *juar* and wheat. Remedial measures have been found to be very effective and what is needed is extensive organisation and procurement of copper carbonate in sufficient quantities and at reasonable prices.

If we calculate the damage at present caused by these two diseases at 0.5%, we lose about 6,000 tons of *juar* and 4,000 tons of wheat worth

Rs. 10.64 lakhs according to the normal prices of Rs. 3 and Rs. 5 per maund respectively. The total cost of an organisation to deal with these diseases which can save this loss is however estimated to cost not more than Rs. 4 to Rs. 4½ lakhs.

An important disease which can also be effectively controlled by setting up a suitable organisation is the moth borer of oranges. Sufficient quantity of chlorosol or petrol will be required to treat the plants against this disease.

Another controllable disease of the non-food crop cotton is the spotted bollworm. The remedy is simple namely uprooting of all cotton stalks by the 15th of May or close cutting of the plants on soil where uprooting may be difficult. Extensive propaganda followed by adequate legislation in due course would effectively check this disease. In the Baroda State, as a result of the introduction of these measures, incidence of this disease is now reported to be not noticeable as against the estimated average loss of about 70 lbs. of *kapas* (seed cotton) per acre some 6 or 7 years ago.

*Cultivation vs. fallow or grazing.*—This question has been referred to, chiefly to draw attention to the problem of food for the cattle *vis-a-vis* food for human population. Ordinarily if a portion of the land classified as culturable waste other than fallow is brought under food or fodder crops, it should not introduce any very appreciable competition between the cultivator and his cattle in our Province. It has been estimated that the best fully stocked open pastures give an yield of about 1.5 tons (3,360 lbs.) of grass per acre while the average yield for all grazing grounds will probably be less than half of this, *i.e.*, about 1,500 lbs. In the case of the cereal crops like wheat, rice and *juar* the estimated yield of fodder is about 1,000, 1,500 and 2,000 lbs. per acre respectively. It will thus be seen that by a more systematic management of pasture areas brought about by the introduction of practices like (1) proper closures and controlled grazing, (2) cutting the grass in its most nutritious state, *i.e.*, at the flowering stage, (3) encouragement of stall feeding, (4) reseedling poor pasture areas with suitable grass mixtures, etc., will give larger quantities of fodder for the cattle, acre for acre, than by growing dual purpose cereal food crops.

An average bullock would require for its maintenance ration nearly 1.5 to 2 acres of good pasture per annum giving a yield of 1.5 tons per acre as against 4.5 to 5.5 acres under *juar* or wheat.

Utilisation of available grass and other fodder to the best advantage, which involves the vexed question of eliminating useless cattle is no doubt an important method of improving the condition of the cattle and a remedy suggested for this purpose *vide* Bulletin No. 2 of the Forest Department is

that of changing the existing rates of grazing by making them more favourable to essential cattle at the expense of the surplus stock.

*Maximum versus economic crop production.*—In order to obtain maximum outturns of food crops as against the so-called commercial or cash crops, the State must come forward to help the cultivators whenever required. The present demand for food and better prices for food crops should ordinarily offer sufficient inducement to the cultivators to grow more food crops for the present but the State has to see that adequate food is produced in the country whether conditions are normal or abnormal. This may be done by stabilising the prices of food and non-food crops, by the introduction of Crop Control Act with a guarantee of relative fair prices for various crops, or by granting adequate subsidies so as to make the business of production of food crops, if not remunerative, at least not unprofitable.

State aid to cultivators in various forms like subsidies, provision of necessary capital, facilities through co-operative organisations; introduction of debt reforms, sound marketing conditions and a stable price level which have also been advocated recently by prominent industrialists and economists like Sir Tracy Gavin-Jones and Sir Manilal Nanavati, should receive further careful consideration.

*Storage.*—Damage caused during storage is considered to be more important in respect of stocks held by *malguzars*, *zamindars* and merchants than those held by small cultivators as the latter usually either give away their surplus produce to the *malguzars* or sell it in the market. In the case of the cereal crops—*juar* and wheat—which are principally damaged by insects during storage, the loss is estimated to be about 3 to 4% and 5% respectively. This loss is preventible if adequate quantities of chlorosol are procured and proper arrangements made to treat the stocks held by *malguzars* and merchants. About 2 lbs. of chlorosol normally costing Re. 1 to Rs. 1-8-0 per lb. are required to treat 25 maunds of grain.

Full details of the schemes relating to the control of plant diseases and damage of stored grain could be worked out when required by the Mycologist and Entomologist of the Department of Agriculture, C.P.

*Need for training a large number of young persons.*—In order to bring effectively the improvements suggested by the Department of Agriculture to the cultivator's door on a mass scale, a considerable increase in the staff and a distinct improvement in the calibre of the persons to be recruited and their prospects are extremely essential. This means that facilities for imparting instruction in agriculture must be considerably augmented to train

a large number of persons for this purpose. If we look to the fact that in U.S.A. there are Agriculture Colleges in almost every State; and that there are 4 or 5 colleges in addition to a large number of Research Institutes specialising on various problems and various crops in England where agriculture is by no means so vitally important as in India, the paucity of Agriculture Colleges and Research Institutes in our Province as well as in India would be clearly and effectively emphasised. In the United Provinces besides the old Agriculture College at Cawnpore, three more have been started recently and in the Punjab also besides the Lyallpur Agriculture College, one more has been started at Amritsar.

# A NOTE ON A METHOD OF OPERATIONAL SOLUTION OF CERTAIN PROBLEM IN HEAT-PROPAGATION\*

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## *Introduction*

THE problem of the propagation of heat in infinite or semi-infinite isotropic solids was solved partially by operational methods.<sup>1</sup> By the help of simultaneous operational calculus<sup>2</sup> we can solve it completely. Further it was shown by G. Prasad<sup>3</sup> that the propagation of heat in an isotropic solid should be represented by an integral equation rather than a differential equation.

2. Let us consider the propagation of heat in an infinite solid. The temperature at any point is given by the differential equation

$$k \frac{\partial^2 v}{\partial x^2} = \frac{\partial v}{\partial t} \quad (1)$$

with the initial condition that

$$v = f(x), \text{ when } t = 0. \quad (2)$$

Now if we put

$$p = \frac{\partial}{\partial x} \text{ and } q = \frac{\partial}{\partial t} \quad (3)$$

the subsidiary equation is given by

$$\frac{kp}{q} v = \frac{1}{p} [v - f(x)]. \quad (4)$$

This equation is nothing but the one which we can write if we use the principle of the conservation of heat energy as given by Prasad<sup>3</sup>

$$k \int_0^t \frac{\partial v(x, t')}{\partial x} dt' = \int_0^t [v(x', t) - f(x')] dx' \quad (5)$$

3. The equation (4) can now be expressed operationally as

$$\begin{aligned} v &= \frac{q}{q - kp^2} \cdot f(x) \\ &= \frac{\sqrt{q}}{2} \left[ \frac{1}{\sqrt{q} - \sqrt{kp}} + \frac{1}{\sqrt{q} + \sqrt{kp}} \right] \cdot f(x) \end{aligned} \quad (6)$$

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\* Read before the Science Congress held at Calcutta, 1943. *Proc. 30th Sc. Congress, Calcutta*, Part IV, p. 3.

Here the two parts will represent the propagation of heat on the two sides of the axis of  $x$ . Hence we will consider the second part of the partial fraction, representing heat-propagation in the positive direction.

Now we know that if

$$F(p) \doteq f(x)$$

then

$$F(p) = p \int_{-\infty}^{\infty} f(h) e^{-ph} H(h) dh,$$

where  $H(h)$  is the Heaviside's unit function.

Hence when  $x > 0$ ,

$$\begin{aligned} v &\doteq \frac{\sqrt{q}}{2} \frac{p}{\sqrt{q} + \sqrt{kp}} \int_{-\infty}^{\infty} f(h) e^{-ph} H(x) dh \\ &\doteq \frac{\sqrt{q}}{2} \int_{-\infty}^{\infty} f(h) \frac{p}{\sqrt{kp} + \sqrt{q}} e^{-ph} H(x) dh \\ &\doteq \frac{\sqrt{q}}{2} \int_{-\infty}^{\infty} f(h) e^{-ph} \frac{p}{\sqrt{kp} + \sqrt{q}} H(x) dh \end{aligned}$$

But

$$\frac{p}{p+a} H(x) \doteq e^{-ax}, \text{ therefore } e^{-ph} \frac{p}{p+a} H(x) \doteq e^{-a(x-h)}, x > h.$$

Hence regarding  $q$  as constant we get

$$v \doteq \frac{\sqrt{q}}{2\sqrt{k}} \int_{-\infty}^{\infty} f(h) e^{-\frac{\sqrt{q}}{\sqrt{k}}(x-h)} dh = \frac{1}{2\sqrt{k}} \int_{-\infty}^{\infty} f(h) [\sqrt{q} e^{-\frac{\sqrt{q}}{k}(x-h)}] dh.$$

Again we know that

$$\sqrt{q} e^{-aq} \doteq \frac{1}{\sqrt{\pi t}} e^{-\frac{a^2}{4t}}$$

Therefore

$$v(x, t) = \frac{1}{2\sqrt{\pi kt}} \int_{-\infty}^{\infty} f(h) e^{-\frac{(x-h)^2}{4kt}} dh. \quad (7)$$

If we had started with the other part of the partial fraction (6) we would have got similar results.

The solution of the integro-differential equation (5) can be obtained from this; for that equation holds in the case of semi-infinite solid with the end

$$v = 0 \text{ and } \frac{\partial v}{\partial x} = 0 \text{ when } x = 0.$$

4. If the solid was at constant temperature  $S$ , then we shall have to solve operationally

$$\frac{\sqrt{q}}{2} \frac{1}{\sqrt{kp} + \sqrt{q}} \cdot S$$

Regarding  $q$  as an algebraic constant,

$$\frac{\sqrt{q}}{\sqrt{kp} + \sqrt{q}} \cdot S = \frac{1}{\sqrt{k}} \frac{\sqrt{q}}{p + \frac{\sqrt{q}}{\sqrt{k}}} \cdot S \div \frac{S}{\sqrt{k}} \int_0^x \sqrt{q} e^{-\frac{\sqrt{q}}{\sqrt{k}} x} dx$$

Again

$$\sqrt{q} e^{-\frac{\sqrt{q}}{\sqrt{k}} x} \div \frac{1}{\sqrt{\pi t}} e^{-\frac{x^2}{4kt}}$$

Hence

$$v = \frac{S}{2\sqrt{k\pi t}} \int_0^x e^{-\frac{x'^2}{4kt}} dx'.$$

For the solution from the other part which gives propagation on the negative side of the  $x$ -axis, we shall regard  $p$  as  $-p$  and then solve operationally. We get the same value and the temperature at any point  $x$  when the end is at zero temperature is given by

$$\frac{S}{\sqrt{k\pi t}} \int_0^x e^{-\frac{x'^2}{4kt}} dx'. \quad (8)$$

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# THE PROOF OF THE FREEDOM OF THE WILL

BY D. G. MOSES

RECENT developments in physical science have brought once again the problem of the freedom of the will to the forefront of philosophical enquiry. For many years after the idealist analysis of the nature of freedom to consist in self-determination, it was thought that there was no more to be said on the subject and that the demands of the ethical life were completely met by this reconciling formula between determinism and indeterminism. In fact, the controversy between the two opposed schools with reference to this time-honoured issue was airily explained as due to fundamental misconceptions on both the sides and that they were right in what they affirmed and wrong only in what they denied. It seemed as if Hegelian Idealism, as modified and expounded by Green and others, had scored a final victory on this momentous question. Not that the chorus of praise on the triumph was universal. Individual thinkers were not wanting who did express their misgivings that the idealist solution of the problem of freedom failed to do justice to the experience of real spontaneity in man's moral life. And this detection of "the rift in the flute" was simultaneous with another perception that the idealistic metaphysics itself was a precarious support of the idealistic ethics. T. H. Green is rightly remembered as the doughty champion of the idea that an ethics divorced from metaphysics is impossible. Either it will have to be reduced to the lowest level of a merely expedient morality, or if it maintains the categorical nature and authority of duty, it cannot be justified. But while this main thesis of Green is more than validated in his *Prolegomena*, it is a matter of common knowledge now that the particular metaphysics expounded in the book was hardly the kind to do justice to the ethics of Green. The *Universal Consciousness* of Green, the *Spiritual Principle* does not maintain that minimum distance of "a hands breath off" from the individual ethical consciousness, with the result that moral accountability and responsibility are seriously jeopardised. With reference to the problem of freedom, it was pointed out that Green and the school to which he belonged were really running with the hare and hunting with the hounds.<sup>1</sup>

A reconsideration of the problem of freedom was greatly encouraged by the falling in repute of the 'block universe' metaphysics of Idealism and the

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<sup>1</sup> *The Ethics of T. H. Green, Herbert Spencer & Martineau*, p. 17.



coming into being of such world-views as Pluralism and Emergent Evolution. The downfall of the classical physics with its inviolable laws and a mechanistic universe was another impetus. Professor Arthur Eddington says: "It is a consequence of the advent of the quantum theory that physics is no longer pledged to a scheme of deterministic law. . . . The future is a combination of the causal influences of the past together with unpredictable elements--unpredictable not merely because it is impracticable to obtain the data of prediction, but because no data connected causally with our experience exist."<sup>2</sup> The philosopher naturally began to ask, if there is a principle of indeterminacy at the heart of the material universe, why should not a similar principle of real spontaneity be a characteristic of man's moral universe? The revolution in physics seemed to knock out one important argument against freedom, wielded with a sure sense of triumph by the determinist that the whole universe was mechanically necessitated. Not that the philosopher is always tied to the apron strings of the scientist or that his philosophical conclusions have always to be ratified by approved scientific schemes. The ever-changing scientific pictures of the physical universe militate against a too-absolute dependence of philosophy on science. But this does not in any way decrease the importance of the new discovery of the principle of indeterminacy in physics as a support from an unexpected quarter for what philosophical ethics has always been insisting as the nature of freedom. So that both from an analysis of the demands of the moral life and the estimation of the metaphysical implications of the new science, moral philosophy is tending towards a conception of freedom as real spontaneity or as the power of choice from among genuine possibilities. And that is the only conception of freedom that will do justice to the facts and requirements of the moral consciousness.

What is the proof of such a conception of freedom? Kant taught us that there can be no theoretical proof of freedom, for freedom is a characteristic of the noumenal self and all proof is within the realm of phenomena. The utmost that could be done was to show that just as it is impossible to prove freedom, it is also impossible to disprove freedom. Hence, according to him, freedom was only a postulate of the moral consciousness. This line of argument has been almost universally accepted by ethical philosophers and the so-called proofs of freedom have confined themselves to the pointing out of considerations that should induce one to legitimately infer the existence of freedom. Thus Nicolai Hartmann in his third volume of *Ethics* says, "The freedom of Will is a metaphysical question. In regard to all

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<sup>2</sup> A. S. Eddington, *The Nature of the Physical World*, pp. 294, 295.

metaphysical truths the proposition holds good that in the strict sense, they can be neither proved nor disproved.”<sup>3</sup> According to him there are three possible methods of proof or three types of argumentation with reference to this question. They are empirical, aprioristic and analytical. Of these he dismisses the first and the second types as unsatisfactory for different reasons. Empirical arguments are of no use in proving freedom because freedom is a metaphysical object and there can be no empirical arguments for metaphysical objects. The case here is exactly as it is with ethical principles. Just as the latter cannot be proved by reference to the moral facts which conform to the principles for there is never any strict conformity, even so the proof of freedom cannot be based upon the actual empirical consciousness of freedom. “In the moral life there are no direct facts of freedom, that is, none that would not require explanation, and could not be understood otherwise.”<sup>4</sup> Apriori proofs of freedom are impossible, for in the question of freedom is concealed the question as to existence and all apriori argumentations are brought to a limit at actual existence. At the most an apriori proof resting on indirect evidence might make clear that freedom is a postulate derived from the nature of moral principles and that freedom is an ontological possibility. Therefore, according to Hartmann, the whole burden of proof rests upon the analytical procedure and in his book he proceeds to examine in detail three complex facts of the moral life namely, the consciousness of self-determination, the fact of responsibility and accountability and the consciousness of guilt. From this analysis he tries to establish the actual existence of freedom.

Our purpose in this paper is to show that there is a direct empirical proof of freedom. Kant is both right and wrong when he insisted that freedom cannot be proved. He was right in the sense that to prove freedom as an object of knowledge is, inevitably to bring it under the application of the law of causality. When so brought, it is no longer freedom which is the power of alternative choices but an effect of freedom. And the resultant of the exercise of freedom is naturally not freedom but a concrete action. He was wrong in the sense that what he took to be freedom was really not the possibility or power of choice but the culmination of the possibility or the result of choice.

The difficulty of a theoretical proof is not peculiar to freedom; it is the same with reference to all kinds of activity or agency. Just as aprioristic proofs never can establish actuality because the irreducible surd of actuality

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<sup>3</sup> Nicolai Hartmann, *Ethics*, Vol. III, p. 138.

<sup>4</sup> *Op. cit.*, p. 141.

as being 'some-where' and 'some-when' militates against complete rationality, similarly theoretical proofs of activity never establish activity because being theoretical they never comprehend its agency or its functioning. Berkeley was eminently right when he said we can have no idea of the self, for the essential characteristic of the self or spirit is activity and all ideas are passive. The idea of activity is not activity but a description of activity in terms opposite to its own nature. Or, to borrow the useful distinction made by Bertrand Russell, the knowledge of activity is by acquaintance, not by description. Freedom is just one kind of activity. As Hartmann says, "if freedom is anything at all, it must be an actual power, a potency of the actual man, not merely of a human ideal."<sup>5</sup> So that, if there is to be any final proof of freedom, it must be sought in the inner experience of the individual. The actual consciousness of freedom is the freedom of the moral consciousness.

Perhaps, this is the point at which we should examine in detail the contention of Hartmann that to prove the existence of the freedom of the will on the basis of the consciousness of freedom is a false way of proof. His arguments<sup>6</sup> are the following:—

(1) The inference of the freedom of consciousness from the consciousness of freedom is an inference from the mere phenomenon of the thing to the existence of the thing. It is exactly similar to the old ontological argument for the existence of God from the conception of God. As against this argument we must raise the following criticisms. (a) It is based upon an illegitimate distinction between the phenomenon and the thing. That was the error of Kant's dualism and his consequent agnosticism. Whatever tests may be employed to adjudicate between the true and the false in knowledge, it will be philosophically dangerous to start without the confidence, it may be only a 'native piety', that the essential nature of knowledge is to put us in contact with the reality. (b) The analogy that is suggested between this proof of freedom and the ontological proof is not valid. Hartmann recognises this point, for he admits, "of course there is a difference between a phenomenon and a concept", but he continues, "but between ontological inference from a phenomenon and an inference from a concept there is in principle no difference. . . . Both are only facts of consciousness: from them the reality of their alleged contents cannot in the least be inferred." The analogy is not valid because the proof of the existence of God is the proof of an objective reality, (that it was a reality than which nothing greater can be conceived is

<sup>5</sup> *Op. cit.* p. 141.

<sup>6</sup> See pages 118 and 119 of the above-quoted work.

not to the point) whereas the proof of freedom is the proof of a subjective reality. Freedom is not an object of thought external to the individual; it is a subjective energising of the individual. Therefore the consciousness of activity *is* the reality of the activity; the danger that usually attaches itself to the inference of the reality of the contents of consciousness from the facts of consciousness *does* not attend here.

(2) The proof of freedom based on the consciousness of freedom does not take into account the possibility of illusion. "In the same way one could also prove the reality of the *mundus fabulosus*." Here again the same error is committed as in the previous argument. The distinction between subjective certitude and objective certainty is a real distinction where objects in the external world are concerned. We cannot prove the reality of the *mundus fabulosus* because the *mundus* is beyond the self. But this world is very different from the inner psychical world of the self and its activities. Here the *esse* of the thing is nothing more than its *percipi*, *percipi* understood in the sense of experience.

(3) "From the consciousness of the actuality of a thing the actuality itself of the thing never follows necessarily although this may be established from other quarters." Not taking into account for the present the Kantian phenomanalism implied in the statement, our reply would be, that it is a sound argument if the reference is only to *things*. It may be true to say that from the consciousness of the actuality of a thing we cannot pass to the actuality of the thing itself, but if the object of proof is not a thing but an activity, an agency, or causality, then consciousness of the actuality of activity is the same as the actuality of the activity. Only, the addition of the word 'actuality' does not add anything more to the activity. It is like saying it twice over.

To proceed with our proof of freedom, our thesis is that we are aware of cases of conscious decision in our lives where consciousness functions as a real initiating cause, and determines in a particular way a situation which nothing whatever that has happened in the physical and psychical realm demands that it should be determined in that way rather than in some other way. This conception of an indeterminate or unpredictable choice is what is meant by the freedom of the will or the self. And the proof of this power is in the fact of our consciousness of this power. If we analyse this power more closely what we find is first the experience of a stage when a certain act is merely possible to us, and second the experience of the transition from this to the stage when the possibility has become actual. Both the stages of the possibility of the act and the actualisation of the act are

directly experienced by us; we know what the first stage feels like, when we are as if big with power, and we know what the second feels like when the one is converted into the other. The whole process is something inner, psychical; therefore what it feels like is what it is. To demand that we should know more than the 'feel' of freedom to know the fact of freedom is to demand the irrational. It is just because we are unaware of these two stages with reference to external causation that we rightly say, that we do not see the *consequence* but only sequence. We have experience of succession but no causal connection. We see one thing coming *after* another but we never see one thing *because* of another. The 'because' part of it, which is the real cause, is hidden from our view; it is not our inner experience. Therefore it is that we legitimately talk of the causal category of explanation of the world's phenomena as a conception that we impose on the world and demand that the world should conform to it. In the words of James Ward, "Its (the subject's) *own* character determines the character that it gives to objects, and its behaviour towards them is so far essentially self-determination."<sup>7</sup>

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<sup>7</sup> James Ward, *The Realm of Ends*, p. 289.

## A DIALOGUE ON THE NATURE OF THE INDIVIDUAL SELF

BY DR. JWALA PRASAD, M.A., PH.D. (CANTAB.)

### *First Discourse*

*Devadatta*.—Here does Devadatta offer his salutation to your worship !

*Brahmānanda*.—Long may you live my boy ! How do you happen to be here so early in the morning ? I suppose you are a Brahmacārin. Are you not ?

*Deva*.—Yes, my revered sir, so am I, and I have come here so early to offer my morning prayers, and also to do a little thinking.

*Brahmā*.—So you are a pious student my child, and I am pleased to find that you are fond of contemplation too.

*Deva*.—(With an air of modesty)—Sir, it is so very kind of you to think of me like that. It is really a piece of good fortune to have a holy personage like yourself, and that in such beautiful surroundings. I would regard it as a great privilege if you permit me to enter into a little conversation with yourself. I am sure it will benefit me immensely—a student as I am.

*Brahmā*.—A good suggestion my son. I heartily welcome it, for contemplation and philosophical discussion are the very essence of our order, and it should be a real pleasure to talk to a seeker after truth like yourself, and that, as you say, at such a pleasant time and in the midst of such attractive environments. At this early hour, the mind is so fresh and the nature so suggestive that one, who is out for a walk, cannot help falling into a reflective mood. I believe, Devadatta, some serious thought fills your mind at this moment, and it is probably with reference to it that you want to open a discourse with me. You are quite welcome my boy. I will do my best to help you in your thinking. . . . And in order that you may know to whom you are talking I may tell you that I am Brahmānanda—a Sanyāsin. But before we begin our conversation, may I also know a little more about you my child ! Who is your Guru ? What have you read ? And what is that which you would like me to talk over to you this morning ?

*Deva*.—I thank you so much, Sir, for the interest that you have taken in me. I am Devadatta—a pupil of Pandit Ananta Nārāyaṇa Bhaṭṭa of the Vedānta Pāthashāla in this city of Benares. I have had the privilege of

being instructed by him in the *Ṣaḍ-darśana*—that is, the Six Schools of Philosophy, and it is natural, therefore, that the 'Adhyātma Vidyā', or metaphysics should be the subject of my interest. The problem that has perplexed me most is the destiny of the individual self after one's death; and this automatically raises the more general question concerning the identity and continuity of the individual self before one's birth and after death. It was this topic that engaged my mind when I found myself in your presence this morning. As it is an 'anadhyāya' (a holiday) to-day, I should regard it as well spent if I could talk to you for some time and know your views on this subject.

*Brahmā.*—Well, Devadatta, you have hit upon a good subject indeed. I am equally interested in it, and it is quite possible that our discourse be productive of some very fruitful results. However, I would like to know whether you have ever discussed this subject with your own preceptor, the learned Pandit Anant Nārāyaṇa Bhaṭṭa, who I know enjoys a good reputation among the Pandits of Benares for his deep knowledge of the *Śāstras*. He is, in fact, supposed to be an authority on the *Ṣaḍ-darśana*.

*Deva.*—I am glad that you appreciate the subject that I have proposed. I have often discussed it with my own Guru, and must confess that he has spared no pains in quoting and expounding the texts of the various *Śāstras* that have a bearing upon it. I have thanked him for that, but at the same time I have also respectfully told him to his surprise that his exposition of the subject has made my confusion worse confounded. The reason is that the texts of the *Śāstras* with reference to this subject are often ambiguous, sometimes divergent, and in most cases dogmatic. As such they can hardly satisfy a mind which longs to inquire into the why and the how of things. It is true that the *Darśanas* are not altogether devoid of rational thought, but in them reason has a secondary place and has even been discarded as something unreliable with regard to the questions of ultimate truth. When I say this I do not at all want to belittle the achievements of the ancients, nor do I in any way mean disrespect to my revered teacher. I quite respect their piety and learning and feel that they were perfectly sincere in all that they have thought and said. It is possible that they are right and my dissatisfaction is due simply to my inability to appreciate the method of their exposition and the matter of their thought. But in any case I suppose you will allow me the right to try to understand their views, and will excuse me if I put them to a critical test. I hope you understand what I mean.

*Brahmā.*—Devadatta, I am delighted to find that you possess a genuine philosophic spirit which, in these days, our students and Pandits of Pāṭhaśālas lack so much. In fact, in India, for a long time now, the motto of the learned has been: 'Bring your beliefs into harmony with traditional authority', and this principle, you know, is so often detrimental to the progress of real philosophy. While, on the one hand, it may be admitted that sometimes tradition does contain valuable truths which are the result of a long patient labour on the part of the ancients; on the other hand, it is often faulty either from the very outset, or it becomes so in course of time. So the best attitude towards it is that of a critical student, who by sifting its material carefully should be able to separate the grain from the chaff. Then, Devadatta, you have also to note that it is not only in India that you find philosophy and philosophers. The thinkers of the West have also made valuable contributions to the subject, and it is worth one's while to know and consider what they have thought and said about the nature of self and the question of its immortality. It is for this reason that I have devoted a considerable portion of my time to the study of the Western thought also. As you suggest, we shall adopt a purely critical attitude in our inquiry, and traditional authority shall neither be accepted nor rejected simply because it has come down to us with the seal of approval stamped upon it by some of the most illustrious teachers of the past. So, good Devadatta, will you now tell me clearly what that is which you think you cannot understand about the nature of the individual self and its continuity before one's birth and after death? But before we begin our conversation let us sit down somewhere. Shall we occupy these seats that are available here? I have found that the mind is more at ease while one is seated, and that it is always good to occupy an elevated seat while one thinks, for one feels thereby that one's vision, both physical and mental, is unhampered in its operations, or in other words, that one is free in one's speculation.

*Deva.*—I agree with all that you have said. So let us sit down here and begin our conversation.

### *Second Discourse*

*Deva.*—The question which has presented almost an insurmountable difficulty to me is the continuity of the individual self before one's birth and after death. You know that almost all our Śāstras hold that there are individual souls and that they are eternal, which doctrine implies that they exist both before birth and after death. Even the Jainas and the



Buddhists accept this doctrine and explain it in their own way. It is only the Cārvākas who deny the eternal nature of soul and also its transmigration. In this connection, the Vedāntists also, who represent a monistic doctrine and hold that there is only one universal soul—Brahman, have found an explanation for the plurality of individual souls and their transmigration. So far as I know of the beliefs of Islam and Christianity, those religions also believe in the continuity of the individual self after death and in a future life. In short, the continuity of individual self seems to be one of the most accepted doctrines on the surface of our planet, and has found support from some of the most illustrious thinkers that I know of. With such an overwhelming evidence in its favour, one can hardly dare to disbelieve it. I also feel inclined to think that it must be true, but there is something about it which does not quite satisfy me. I wish some one could either convince me of its truth, or show conclusively that it is false.

*Brahmā.*—Devadatta, I will prove to you that there is no continuity of the individual self before birth and after death, and will try to meet any arguments that you may put forth in order to show that there is such a continuity.

*Deva.*—Well Sir, then, in order that the arguments on both the sides be represented and put to a test, I will try my best to defend the doctrine of the immortality of the individual soul, and show that it exists before birth and survives after death.

*Brahmā.*—All right, Devadatta. Now I maintain that the life of the individual self begins at the time of conception in the womb of the mother and ends with that irretrievable disability of the body which we call death. There is nothing like an individual soul, which exists before conception and enters the body, as it were, from outside at the time of conception, or after it; or which leaves the body and goes away elsewhere at the time of death or after it. In other words, the individuality of self is bound up with the individuality of the body. There is no separate entity like an individual soul which can exist independently of a physical body. This applies to the individuality of all beings, or I may go even further and say, to the individuality of all things. For, one and the same principle governs all the forms of existence, and the distinctions of the organic and the inorganic, the animate and the inanimate, the conscious and the unconscious, are only apparent and not real,—relative and not absolute. All that we can admit is a gradation of forms in the scale of reality, which ultimately is of one uniform nature. This implies that so far as the life-principle and the basis of individuality

go they are the same in the case of all. It need not be supposed that human beings are different from other animals or from plants, or even from inorganic substances, in that they possess a life-principle peculiar to themselves which is known as the soul or spirit, and that this alone forms the basis of their individuality. Now, tell me, Devadatta, what you think of this doctrine.

*Deva.*—I must confess, Sir, my inability to grasp what you have said so eloquently about the individuality and the life-principle of things. You have said so many things all at once, and they are so new to me, as I suppose they must be to so many others, that I seem to be lost in a strange land, and can hope to find my way only if you agree to lend me a guiding hand and take me with yourself with a little patience and sympathy. You know that I am yet a novice in philosophy and am used to only a few familiar ways of thinking. However, I have understood you to say that there is no individual soul apart from the body. This sounds so strange and so absurd. I think it should not be difficult at all to see that the soul is different from the body and that it can exist independently of it. Apart from the weight of general opinion that this doctrine carries with it, is it not an evident fact that the body is material and unconscious in itself, while the soul is non-material and conscious.

*Brahmā.*—How do you, or those who believe in this doctrine, know that the body and the individual soul are two separate entities, and that the one is material and unconscious, while the other is non-material and conscious?

*Deva.*—That the soul is different from the body and is conscious is evident from the fact that so long as one is alive there is consciousness, and as soon as one dies consciousness disappears. Now, as the body exists for some time even after death but there is no consciousness, it appears that this quality belongs to something different from the body which is present in it while one is alive, and which leaves it when one dies. This we call the soul or spirit. Moreover, the soul or spirit is also non-material, for it has not been found to possess the attributes which are characteristic of a material substance. It has neither extension nor weight. At least, such is the belief of the majority of thinkers. There are a few schools of thought, however, which do regard the soul as extended. In one of the Upaniṣads it has been mentioned to have the size of the thumb. The Jainas think that it has a variable size which adjusts itself to the size of the body in which it has to reside during a certain life. For example, a soul, while in an elephant's body

is big, and becomes small when the same enters the body of a smaller animal, e.g., of a dog, a hare, or an ant. There are others who consider the soul to be a kind of vital air—'prāṇa' or breath. But such conceptions as these are probably crude and may be dismissed as absurd at the very outset. But what have you to say to the other doctrine?

*Brahmā*.—Devadatta, you have said exactly what I had anticipated. You have repeated an argument and a belief which are perhaps the most common among men. But we have to examine them carefully and with an open mind in order to see that they are untrue like so many other popular notions of the world. The chief argument for the existence of an individual soul, as something separate from the body, is based upon a belief that the body is an unconscious material substance. And this belief in its turn seems to find support in the apparent fact that after death although the body exists, consciousness disappears. Thus consciousness is dissociated from the body and attributed to something different from it, which is supposed to leave the body after death. This the people call the soul or spirit. However, a little thought must show that they have cherished wrong notions about the nature of the body and the nature of death, and have therefore supposed wrongly that there is something like an individual soul different from the body—something which enters it at some stage before birth, resides in it during one's lifetime, and then leaves it off at the moment of death. There are other reasons too which persuade a man into believing that there must be a permanent individual soul existing before birth and after death. These also we may have occasion to consider during our conversation, but first let us consider the particular argument referred to just now. The first point that we have to understand is with regard to the origin of the individual self. We have to see whether there can be discovered any stage at which the individual soul or spirit enters the body as if from outside. Those who have some knowledge of anatomy and physiology, and even those who have the ordinary common-sense and experience of these matters, know it for a fact that the foundations of an individual life are laid in that particular physiological function which is called conception or impregnation. And what is this conception? It is, as the biologists would put it, a fertilization of an ovum by the union of a spermatozoon. And what are these ovum and spermatozoon out of the union of which the individual body is formed? They are living organisms developed on account of a physiological function taking place constantly in a particular part of the female and the male body, after it has attained a certain stage of maturity. So we see that

the individual body is the result of the combination, so to speak, of two other individual bodies, which have their source in two different physical organisms, *viz.*, those of the father and the mother. Thus we find that the material out of which the body is immediately derived, is as living as the body itself, and that it owes its origin to two sources. Now these bodies, in their turn, owe their maintenance to the nourishment which is provided for them by the food which the organism takes in and assimilates. This food, although usually of an organic kind in the case of higher animals, is also seen to be of an inorganic nature in the case of the lower forms of animals and the vegetable organism, and it may be asserted that ultimately the nourishment for life is mostly obtained from what we usually regard as lifeless. However, the very fact that such stuff can nourish life should be sufficient to show that it is not without life. For no cause can produce an effect which is different from it in its nature. Moreover, modern scientific researches tend to prove more and more that what we call matter and material is ultimately not a dead inert something, but that it is a centre or nucleus of energy. In other words, the whole stuff, which the world is made of, is a living active mass of elastic energy, which arranges itself automatically, or which can be arranged artificially, in the form of various centres or groups of energy which we call individual things. Thus one can understand easily now that the life which the individual self has at the first moment of conception, is due to that living stuff derived from the parents which itself can be shown to be the product of certain physiological functions of the body in relation to the matter which is taken in by the parents as their food. The same applies to the individual life of beings other than man. Thus the whole process of the origin and development of individual life is as evident as any thing else. That something like an individual soul enters the body at any particular stage is as absurd as it is unnecessary to believe. The individuality of self begins with that physiological event which is called conception, and is thus inseparably bound up with that physical organism which forms its basis. With the growth of this organism it also grows, and with that particular form of its dissolution which we call death, it also must necessarily be dissolved. With regard to the fact that after death consciousness disappears although the body remains, it may be pointed out that the state of the body after death is not the same as before it. After death the various organs cease to work, and their potential energy also is not the same. In fact, the process which at a certain stage is called death, is present even in that condition which we call life, and that activity which we call life up to a certain degree

of its manifestation, is present even after death. Death may be said to have its beginnings in life, and life its beginnings in death. Generally we do not die all at once, nor do we come into existence all of a sudden. After I have explained to you how an individual life is formed, probably you would like to know how it is dissolved. Now as the individual is formed out of a number of individuals so to speak, that is out of a number of living centres of life, similarly if the body be left to itself after death, it is dissolved into a number of individuals, that is to say into a number of organisms which arise out of the decomposition of the body. And these are scattered about, assuming different forms, entering into fresh combinations and thus giving rise to a number of individualities. The body which survives death has life, but not such as it manifests until the time of death. If after death those conditions of the body, which prevailed immediately before it, could be restored somehow, there is not the slightest doubt, that the individual self would be restored in spite of the belief that the soul leaves the body and goes away elsewhere. The upshot of the whole argument is that the individual self begins with a particular kind of organic integration or co-ordination which we call conception, and ends with that kind of disintegration or dislocation which we term death. The material out of which it grows is not one single entity, such as the soul is supposed to be, but two organic centres, viz., the ovum and the spermatozoon in the case of human beings. And these, in their turn, are the product of a thousand and one physiological processes acting upon that multifold material which we call our food. The material into which it is dissolved is similarly a multifold number of living organic beings which get scattered about and enter into incalculable combinations. The distinctions of material and non-material forms of existence are superficial and also superfluous, and being assumed to be true they create difficulties, to overcome which there are formed such queer hypotheses as those of the existence of permanent individual souls and their transmigration from one life to another. The same distinctions are responsible for that difficulty which is found in explaining the relation between mind and matter, the soul and the body.

I think I have spoken enough, Devadatta, and I appreciate the silent attention with which you have listened to me. Now it should be your turn to tell me what you feel with regard to what you have heard from me. I can see from your face that you are already impatient to say something on this subject.

*Deva.*—I am so very thankful to you, Sir, for having imparted to me such an illuminating information about the origin of our bodies, or as you

say, of our individual selves. I seem to understand a good deal of what you have said, and feel that with your guidance it should be possible for me to see things in a clearer light and from a broader standpoint. However, there are so many issues and side-issues involved in a consideration of this problem that it is not possible for one to stop short of a discussion of all of these.

You have said that there are no individual souls apart from individual bodies, and that they do not come from anywhere nor do they go anywhere after death. You have also tried to demonstrate the truth of what you have said, and I may confess that your argument has appeared to me quite rational so far as the nature of our physical self is concerned. I think an explanation of the nature of one's psychical self is still to be found. That our mental and moral life also should have its basis in the physical constitution of our being seems improbable, for it is evidently so different in nature. We find that the children of one and the same parents, although they owe their bodies to an identical material, differ sometimes so much in their mental and moral qualities that it should be hard to believe that these could have their basis in their physical constitution. Besides, there are other reasons as well which go to show that there must be individual souls apart from the body, although difficult it may be to understand whence they come and whither they go. However, I would like to know what you have to say on the particular point to which I have referred just now.

*Brahmā.*—I am glad to note Devadatta, that you are pursuing the inquiry so keenly. I can quite understand the difficulty which has presented itself to you in accepting the doctrine that there is no soul apart from the body. What you have to understand is that the personality of a man is determined by his heredity and environments, and that these two factors are sufficient to explain the psychical and the moral characters of a person as well as his physical character. The difficulty you have raised is again due to the wrong notion that the body as something material cannot be the basis or explanation of that which people generally think is non-material. In practice, however, they do recognise the influence of heredity as well as environment, and attach importance to a man who has a respectable parentage and has been brought up in cultured society. In fact one does inherit the mental and moral nature from one's parents simply because one does the physical. The various merits and defects of one's mental and moral life are determined at the time of conception by the combined influence of the characters of the parents, and have their basis in the organic cell formed out of the

combination of the spermatozoon and the ovum. Later on, before birth they are determined by the kind of nourishment which is available for the fœtus in the womb, and after birth by the environments in which one is brought up. With regard to the differences of character among brothers and sisters, it may be pointed out that variations in mental and moral life are again due to variations in the physical constitution, and these can be explained by the difference of the conditions pertaining to the life of the parents at the moment of conception, and by the nature of circumstances in which the fœtus grows in the womb of the mother, and later on by the environments of the child after birth. So far as conditions in the heredity and the environments of certain persons are similar, there is also to be found similarity of character among them whether they belong to the same parentage or not. Our experience of the characters of brothers and sisters, and of other persons, confirms this view beyond doubt. What we call moral character is nothing but an expression of the activity of what we call the physical constitution of our being. Which particular moral quality is connected with which particular part of our physical constitution is perhaps difficult to see at present. A little study of our brain, however, ought to convince us with regard to the truth that what we call our mental life is nothing but an expression of the constitution and functions of our brain. Those who have studied Anatomy and Physiology know how insanity has its basis in a derangement of the structure and function of our brain. Even in our common experience we see how changes in our body for the better or for the worse also affect our mental life in a corresponding manner. By certain changes in the brain, produced automatically or artificially, the powers of memory, imagination and ideation can be increased or decreased. The diseased or the healthy condition of our heart and liver affects our emotional nature in its own way. All this goes to show that all the mental and moral qualities, which we generally attribute to something apart from the body—a soul or spirit, are simply expressions of that active conscious reality which has arranged itself in the form of our body and is functioning through it. The body is not made of that stuff which people usually call matter, and which therefore is regarded as inert and unconscious. The body itself has those attributes which are supposed to belong to the spirit. And this doctrine, if it be understood thoroughly and in all its bearings, should dispel all inconsistencies and the consequent difficulties which arise out of an unwarranted dualism of spirit and matter, soul and body.

*Deva.*—So now I see, Sir, that according to you everything about conscious life can be explained by the structure and the functions of what we call

our body. I quite follow a good deal of what you have said in order to prove that it is so. But still there are so many other things that one has to consider before one can be prepared to accept your doctrine as true. It may be admitted that the physical organisation and the changes in it determine the conscious aspects of life, but are there not such phenomena as go to show that the initiative lies not in the body but in something else, and that the body is simply affected by it. Does not the psychical act of volition precede the actual movements of the body to bring about which it is made? Does not the psychical emotion of love or fear precede the organic changes that result from it? Do we not actually find that physical diseases are cured by the exercise of what is known as will-power, and that this is done sometimes in spite of long gaps of space that lie between the healer and the patient. Are we not aware of the existence of such phenomena as telepathy? How do you explain all this?

*Brahmā*.—You have raised a good point, Devadatta, and I shall presently throw light on it according to my own views. The chief thing to be explained is the phenomenon where there does not appear to be the presence of what is known as matter, or of any connecting link between what we usually call spirit and matter. It may be pointed out that the difficulty of explaining this kind of phenomenon is again due to the cherishing of a wrong notion about the nature of matter, *viz.*, that of considering it as an unconscious and inactive substance. Once we realise that there is only one and the same reality and that it is ultimately conscious energy, all difficulties vanish by themselves. Now let us take the particular points you have raised and see whether they can be explained without postulating a separate existence of what we call individual souls. Let us consider an act of volition and the consequent effects of it on physical things. When we want to move our leg, it seems as if the order comes from something different from the body and that the body obeys it. How volition produces a movement in the leg—this the believers in the soul-theory are not able to explain. On our theory the act of volition, as also other psychical phenomena, which are supposed to originate in a separate soul-existence, are directly due to that centre of conscious active energy which we call our body. In other words, instead of postulating two kinds of existence, we maintain that there is only one, and that this, being itself conscious and active, is not only adequate to explain all that is attributed to a soul, but also enables us to understand in a more rational way the relation between what we have learnt to distinguish as the psychical and the physical phenomena. In the act of volition, for example, in order to move our



leg, we can understand that the volition is the demand of the whole upon a part of it, and that it is fulfilled by setting in motion certain centres of energy resulting in the movement of the leg. Similarly it is possible to explain those relations of cognition, conation and feeling which exist between ourselves and the objects outside whether near or far in space. To those who believe in the doctrine of a separate soul-existence, it is yet a mystery how the communication and interaction between the mental and material existence, and between one mind and another, take place. On our theory, however, it should not be difficult to understand or explain all these phenomena. The whole universe being made of one and the same conscious active stuff, and what we call space being also, as it were, filled up with the same, the communication and interaction between the different centres of this world-stuff are rendered quite possible and intelligible. There is no vacuum—only the stuff which fills the so-called vacant space is unperceivable by our ordinary senses. Telepathy, thought-transference, hypnotism—all these are easily explained by the identity and continuity of this universal stuff.

*Deva.*—Now I understand how it is possible to explain the psychical phenomena and the interaction between the internal self and the external world on the basis of the unity of the universe, the identity of its nature and the uniformity of its function. But do you not think that the assumption of this kind of unity and uniformity itself lands us into insurmountable difficulties? For example, if the whole world is made of one uniform stuff, how should it be possible to explain the differences of character that we do find among the things of the world. The stuff being one and the same, all things must be of uniform character. Further, and allied to this problem of the diversity of nature is the question of the diversity of fate. Why should some beings be more fortunate than others? Those who believe in the existence of permanent individual souls and their transmigration explain the differences of character and fate on the basis of the effects of deeds pertaining to past lives. And this appears to be a satisfactory explanation. What have you to say on this point, Sir?

*Brahmā.*—Again you have put an intelligent question, Devadatta, and I shall be glad to answer it. I know the believers in the soul-theory find their greatest support in the explanation that they think it is possible to find, according to their theory, of the differences of character and fate among living beings. But, while what they say about the deeds of past lives and their consequences is obscure and a hypothesis only, the explanation which it is possible to find for the differences of character and fate according to our theory is quite clear and verifiable by facts.

The differences in character are due to the differences of constitution, and these in their turn are due to the differences of heredity and environments. It is a fact that by securing a particular kind of heredity and environments a particular kind of character can be produced, and that it can also be changed to a certain extent during one's life-time by effecting certain changes in one's physical constitution—especially in the brain. The study of pathology in its bearing upon insanity provides instructive material in this connection. Because of certain changes in the nervous system an extremely dull person may become clever, and *vice versa*. That bad liver causes peevishness is too well known to be pointed out. Thus differences of constitution quite satisfactorily explain differences of character, and these explain differences of fate.

*Deva.*—I quite see how differences of constitution can explain differences of character, but am unable yet to understand how they can explain differences in the fate of beings. It may be admitted that, to a certain extent, they may be happy or unhappy during their life-time according to their character, when they are grown up and can control their actions; but what have you to say with regard to the differences of opportunities that attach to them by virtue of their birth and later on during the period of infancy. Why should one be born and brought up in fortunate circumstances, and another in those of the opposite kind?

*Brahmā.*—One is born and brought up in certain circumstances, favourable or unfavourable as we call them, because one has to be placed in them in the scheme of the universe. In the system of reality there has to be a multiplicity of active centres, each filling up a certain definite position. That some of these are placed in favourable circumstances, and others in those of the opposite kind—this is our own view. In themselves, those beings are neither fortunate nor unfortunate. They are there simply as essential elements in the life of the universal organism. The universe and its constituent parts, together with all their workings, are not meant to create favourable or unfavourable circumstances for individual beings. All of them are simply unfolding their potentialities for the realisation of that universal life which some call Nature and others God. The so-called fate of beings is determined with reference to their position and function in the universe, and not with a view to create happiness or misery for them. It is we who read this kind of fate in our lives, and it therefore does exist so far as our own individual point of view is concerned. The philosophic attitude should however be to look at our life from the point of view of its function in the economy of that whole of which it is a part. And it will be found that

this attitude will give to the philosophers satisfaction even in what people may regard as the most adverse circumstances in life—a satisfaction such as that which comes to one at having done one's duty in spite of the pains and suffering that it may involve. It is a kind of self-realisation.

*Deva.*—Thank you, Sir, for having so readily responded to my queries. What you have said so far has completely changed my outlook with regard to the nature and meaning of our lives. It has, in fact, presented the universe in an altogether new light, and seems to suggest wonderful ideas with regard to the nature of God and his relations to man. Its psychological and ethical implications must also be interesting. The whole theory is full of a world of philosophical interest. But it being time now to go back to my Āśrama, I am afraid, I must forego the pleasure of your company and discourse for the present. I would request you, however, to give us the pleasure of your presence at our Āśrama on the next Anadhyāya (holiday). There you will be able to meet my Guru—Pandit Ananta Nārāyaṇa Bhaṭṭa and some other Pandits. I will also arrange to invite an esteemed friend of mine—Prof. P. M. Antani of the Benares Hindu University, who is an eminent scholar of Philosophy—both European and Indian. I will report to them all that you have said to-day, so that it may be possible for us to take up the argument at the stage at which we are leaving it to-day. I hope you will certainly accede to my request.

*Brahmā.*—I am extremely pleased, my son, with the way in which you have talked to me on such an abstruse subject as we have discussed this morning. It is a real pleasure to converse with seekers after truth like yourself. I shall be glad to come to your Āśrama and meet your teacher and the others there. But first you must take the permission of your preceptor for holding the discussion which you contemplate, and then you can send word to me at my Āśrama on the Maṇikarṇikā Ghat.

*Deva.*—I am so very thankful to you for having accepted my proposal. I will do as you desire. Here does Devadatta bow at your feet and take your leave !

*Brahmā.*—Long mayest thou live my boy ! Bright and sharp be thy intellect ! Great be the store of thy knowledge ! Divine be thy bliss ! Good bye, Devadatta. I hope to meet you again on the next holiday.

(The second discourse ends)\*

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\* For a scientific reference on this subject I would strongly recommend Haldane's 'The Philosophy of a Biologist,' which is extremely interesting and instructive.

# RELATIONS BETWEEN CONFLUENT HYPER-GEOMETRIC FUNCTIONS AND THE POLYNOMIAL OF MITTAG LEFFLER

BY N. A. SHASTRI

I. The polynomial  $g_n(z)$  whose generating function is

$$\left(\frac{1+t}{1-t}\right)^z = 1 + \sum_{n=1}^{\infty} g_n(z) t^n \quad |t| < 1 \quad (1)$$

was used by Mittag Leffler<sup>1</sup> in a study of analytical representation of a linear homogeneous differential equation. It was also used in his researches on the analytical representation of a uniform branch of a monogenic function and was connected with some other expansions. Pidduck<sup>2</sup> used an expansion equivalent to (1) but in a different notation, in his researches on the propagation of a disturbance in a fluid acted upon by gravity and gave a recurrence formula for  $g_n(z)$ , the relation

$$g_n(z) < 2^{2z-1} n^{z-1} \quad (2)$$

and proved that the series  $\sum_{n=1}^{\infty} \frac{(-)^n g_n(z)}{(n+\beta)^{z+1}}$  is uniformly and absolutely convergent.

Recently Bateman<sup>3</sup> has investigated an alternative generating function for  $g_n(m)$ , for integral values of  $n$  and  $m$ , viz.,

$$\frac{2u(1+u)^{n-1}}{(1-u)^{n+1}} = \sum_{m=0}^{\infty} u^m g_n(m) \quad (3)$$

$n$  an integer greater than zero, and  $|u|$  sufficiently small. He has also generalized the polynomial by the definition

$$\frac{(1+t)^{z+r}}{(1-t)^{z-r}} = \sum_{n=0}^{\infty} t^n g_n(z, r) \quad (4)$$

and has given expression for the generalized polynomial in terms of hypergeometric function and also its asymptotic expansion. A few integrals are also given by him.

We have used in the present paper the methods of operational calculus to obtain relations between confluent hypergeometric functions, Bessel functions and the polynomial  $g_n(z)$  or  $g_n(z, r)$ . We have also obtained an integral involving  $g_n(z)$  and Angelescu's polynomial  $\pi_n(x)$ , the latter being a generalized type of Laguerre polynomial.

## II. Connection with confluent hypergeometric functions.—

Put  $t = \frac{1-p}{1+p}$  in (4), change  $p$  into  $2p$  and multiply by  $\frac{p}{(p+\frac{1}{2})^m}$  we get

$$\frac{1}{p} \cdot \frac{1}{2^s p^{s-1}} \cdot \frac{p}{(p+\frac{1}{2})^{m+r}} = \sum_{n=0}^{\infty} \frac{(-)^n p (p-\frac{1}{2})^n}{(p+\frac{1}{2})^{m+n}} g_n(z, r). \quad (5)$$

We apply the theorem<sup>4</sup>:

$$e^{-\lambda x} h(x) \doteq \frac{p}{p+\lambda} f(p+\lambda) \quad (6)$$

if

$$f(p) \doteq h(x)$$

to the operational representation

$$\frac{1}{p^n} \doteq \frac{x^n}{\Gamma(1+n)} \quad (7)$$

and we get the relation

$$\frac{p}{(p+\frac{1}{2})^{m+1}} \doteq \frac{e^{-\frac{x}{2}} x^n}{\Gamma(1+n)}.$$

Hence

$$\frac{p}{(p+\frac{1}{2})^{m+r}} \doteq \frac{e^{-\frac{x}{2}} x^{m+r-1}}{\Gamma(m+r)}.$$

We now interpret both sides of (5) by using the fundamental theorem of operational calculus that if  $f_1(p) \doteq h_1(x)$  and  $f_2(p) \doteq h_2(x)$  then  $f_1(p) = f_2(p)$  implies  $h_1(x) = h_2(x)$ . To interpret the right-hand side we use the operational representation<sup>5</sup>

$$N_{k,m}(x) \doteq \frac{p(p-\frac{1}{2})^{k-m-\frac{1}{2}}}{(p+\frac{1}{2})^{k+m+\frac{1}{2}}} \quad R(m) > -\frac{1}{2} \quad (8)$$

while for the left hand side we use the product theorem of the operational calculus that if  $f_1(p) \doteq h_1(x)$  and  $f_2(p) \doteq h_2(x)$  then

$$\frac{1}{p} f_1(p) f_2(p) = \int_0^x h_1(\xi) h_2(x-\xi) d\xi. \quad (9)$$

We obtain after the application of this theorem and the operational representations given above

$$\begin{aligned} 2^s \Gamma(z) \Gamma(m+r) \sum_{n=0}^{\infty} (-)^n N_{\frac{m}{2} + n, \frac{1}{2}(m-1)}(x) g_n(z, r) \\ = \int_0^x e^{-\frac{1}{2}\xi} \xi^{m+r-1} (x-\xi)^{s-1} d\xi \\ R(z) > 0 \text{ and } R(m) > 0. \end{aligned}$$

Putting  $\xi = 2t$ ,  $x = 2y$  and using

$$\int_0^y (y-t)^a t^{b-1} e^{-t} dt = \frac{\Gamma(b) \Gamma(1+a)}{\Gamma(1+a+b)} (-)^{-\frac{1}{2}(a+b+1)} e^{-\frac{1}{2}y} y^{\frac{1}{2}(a+b-1)} \times M_{\frac{1}{2}(a-b+1), \frac{1}{2}(a+b)}(-y)$$

which is a slight modification of the integral<sup>6</sup>

$$M_{k,m}(z) = \frac{\Gamma(2m+1) z^{m+\frac{1}{2}} 2^{-2m}}{\Gamma(\frac{1}{2}+m+k) \Gamma(\frac{1}{2}+m-k)} \times \int_{-1}^{+1} e^{\frac{1}{2}zu} (1+u)^{-\frac{1}{2}+m-k} (1-u)^{-\frac{1}{2}+m+k} du$$

we get the result

$$\begin{aligned} \sum_{n=0}^{\infty} (-)^n N_{\frac{m}{2}+n, \frac{1}{2}(m-1)}(2y) g_n(z, r) \\ = \frac{2^{m+r-1} (-)^{-\frac{1}{2}(s+m+r)}}{\Gamma(z+m+r)} e^{-\frac{1}{2}y} y^{\frac{1}{2}(s+m+r-2)} M_{\frac{1}{2}(s-m-r), \frac{1}{2}(s+m+r-1)}(-y) \end{aligned} \quad (10)$$

$R(z) > 0, R(m) > 0.$

This result yields as particular cases the relations between  $M_{k,m}$  function, the polynomial  $g_n(z, r)$  and the polynomials like Bateman, Laguerre and Sonine.

(i) Put  $m = 2$  and use  $N_{n+1, \frac{1}{2}}(2y) = (-)^n k_{2n+2}(y)$

where  $n$  is an integer  $k_n$  representing a Bateman function. We get

$$\begin{aligned} \sum_{n=0}^{\infty} k_{2n+2}(y) g_n(z, r) \\ = (-)^n \frac{2^{r+1} e^{-\frac{1}{2}y}}{\Gamma(z+r+2)} (+y)^{\frac{1}{2}(s+r)} M_{\frac{1}{2}(s-r-2), \frac{1}{2}(s+r+1)}(-y) \end{aligned} \quad (11)$$

(ii) Use

$$\begin{aligned} N_{\frac{m}{2}+n, \frac{1}{2}(m-1)}(2y) &= \frac{n! (2y)^{m-1}}{\Gamma(m+n)} e^{-y} L_n^{m-1}(2y) \\ &= (-)^n \Gamma(n+1) (2y)^{m-1} e^{-y} T_{n-1}^m(2y) \end{aligned}$$

$L_n^m$  and  $T_n^m$  representing the Laguerre and Sonine polynomials respectively.

We obtain

$$\begin{aligned} \sum_{n=0}^{\infty} \frac{(-)^n n!}{\Gamma(m+n)} L_n^{m-1}(2y) g_n(z, r) \\ = \sum_{n=0}^{\infty} \Gamma(n+1) T_{n-1}^m(2y) g_n(z, r) \\ = \frac{2^r e^{\frac{1}{2}y} (-y)^{\frac{1}{2}(s-m+r)}}{\Gamma(z+m+r)} M_{\frac{1}{2}(s-m-r), \frac{1}{2}(s+m+r-1)}(-y). \end{aligned} \quad (12)$$

Now Sonine polynomial is a generalization of parabolic cylinder functions being related to them by means of

$$T_{-\frac{1}{2}}^n(x^2) = \frac{2^n}{2n! \sqrt{\pi}} e^{\frac{1}{2}x^2} D_{2n}(x\sqrt{2})$$

$$T_{\frac{1}{2}}^n(x^2) = \frac{2^{n+\frac{1}{2}} x^{-1} e^{\frac{1}{2}x^2}}{(2n+1)! \sqrt{\pi}} D_{2n+1}(x\sqrt{2})$$

Hence by putting  $m = \frac{1}{2}$  and  $m = \frac{3}{2}$  respectively in (12) and using the results given above, we get after replacing  $x^2$  by  $2y$  and simplifying by the duplication formula of the gamma functions

$$\sqrt{\pi} \Gamma(2z) = 2^{2z-1} \Gamma(z) \Gamma(z + \frac{1}{2})$$

the relations

$$\sum_{n=0}^{\infty} \frac{2^{-n}}{\Gamma(n + \frac{1}{2})} g_n(z, r) D_{2n}(2\sqrt{y})$$

$$= \frac{2^r e^{-\frac{1}{2}y} (-y)^{\frac{1}{2}(z+r-\frac{1}{2})}}{\Gamma(z+r+\frac{1}{2})} M_{\frac{1}{2}(z-r-\frac{1}{2}), \frac{1}{2}(z+r-\frac{1}{2})}(-y) \quad (13)$$

and

$$\sum_{n=0}^{\infty} \frac{2^{-n-1}}{\Gamma(n + \frac{3}{2})} g_n(z, r) D_{2n+1}(2\sqrt{y})$$

$$= - \frac{2^r e^{-\frac{1}{2}y} (-y)^{\frac{1}{2}(z+r-\frac{1}{2})}}{\Gamma(z+r+\frac{3}{2})} M_{\frac{1}{2}(z-r-\frac{1}{2}), \frac{1}{2}(z+r+\frac{1}{2})}(-y) \quad (14)$$

### III. Connection with Bessel and Lommel Functions.—

Change  $t$  into  $-t$  in (4) and then replace  $t$  by  $\frac{1}{p}$  and multiply both sides by  $e^{-\frac{1}{p}} p^{-s}$  we get

$$e^{-\frac{1}{p}} p^{-r-s} \frac{(p-1)^{s+r}}{(p+1)^s} = \sum_{n=0}^{\infty} (-)^n p^{-n-s} e^{-\frac{1}{p}} g_n(z, r).$$

This can be written as

$$\frac{1}{p} \left\{ \sum_{l=0}^{r+2} \binom{r+2}{l} e^{-\frac{1}{p}} p^{-r-s+l} \right\} \frac{p(p-1)^{s+r}}{(p+1)^{s+r+2}}$$

$$= \sum_{n=0}^{\infty} (-)^n e^{-\frac{1}{p}} p^{-n-s} g_n(z, r) \quad (15)$$

where  $r$  is an integer. Interpreting this equation with the help of (9), the operational representation<sup>4</sup>

$$e^{-\frac{1}{p}} p^{-n} \doteq x^2 J_n(2\sqrt{x}) \quad R(n) > -1 \quad (16)$$

and the modification of (8) by the application of the theorem :

$$f\left(\frac{p}{a}\right) \doteq h(ax), \quad a + ve, \text{ if } f(p) \doteq h(x)$$

we get the result

$$\begin{aligned} \sum_{l=0}^{r+2} \int_0^1 N_{s+k+1, \frac{1}{2}} [(x-\xi)2] \binom{r+2}{l} \xi^{\frac{1}{2}(r+s-l)} J_{r+s-l}(2\sqrt{\xi}) d\xi \\ = 2 \sum_{n=0}^{\infty} (-)^n x^{\frac{n+s}{2}} J_{n+s}(2\sqrt{x}) g_n(z, r) \end{aligned} \quad (17)$$

If  $r = 0$ , the generalized polynomial  $g_n(z, r)$  changes into  $g_n(z)$  defined by (1) and we get

$$\begin{aligned} \int_0^1 N_{s+1, \frac{1}{2}} [2(x-\xi)] \xi^{\frac{s-2}{2}} [J_{s-2}(2\sqrt{\xi}) + 2\sqrt{\xi} J_{s-1}(2\sqrt{\xi}) + \xi J_s(2\sqrt{\xi})] d\xi \\ = 2 \sum_{n=0}^{\infty} (-)^n x^{\frac{1}{2}(n+s)} J_{n+s}(2\sqrt{x}) g_n(z). \end{aligned} \quad (18)$$

If  $z$  is an integer results (17) and (18) give rise to

$$\begin{aligned} \sum_{l=0}^{r+2} \int_0^1 \binom{r+2}{l} (-)^{s+r} \xi^{\frac{1}{2}(r+s-l)} k_{2s+2r+2}(x-\xi) J_{r+s-l}(2\sqrt{\xi}) d\xi \\ = 2 \sum_{n=0}^{\infty} (-)^n x^{\frac{1}{2}(n+s)} J_{n+s}(2\sqrt{x}) g_n(z, r) \end{aligned} \quad (19)$$

$$\begin{aligned} \int_0^1 (-)^s \xi^{\frac{s-2}{2}} k_{2s+2}(x-\xi) [J_{s-2}(2\sqrt{\xi}) + 2\sqrt{\xi} J_{s-1}(2\sqrt{\xi}) + \xi J_s(2\sqrt{\xi})] d\xi \\ = 2 \sum_{n=0}^{\infty} (-)^n x^{\frac{1}{2}(n+s)} J_{n+s}(2\sqrt{x}) g_n(z) \end{aligned} \quad (20)$$

where  $k_n$  denotes Bateman's polynomial.

Relations between  $g_n(z, r)$  and Lommel functions can be obtained by multiplying both sides of (15) by  $\frac{1}{p^2 + w^2}$  and interpreting the resulting equation with the help of

$$U_n(2wx, 2\sqrt{x}) \doteq \frac{\omega^n e^{-\frac{1}{p}}}{p^{n-2}(p^2 + w^2)} \quad R(n) > -1 \quad (21)$$

(9) and (8) with necessary modification. We will then get

$$\begin{aligned} \sum_{l=0}^{r+2} \binom{r+2}{l} \omega^{-r+l} \int_0^1 N_{s+r+l, \frac{1}{2}} [2(x-\xi)] U_{r+s-l+2}(2w\xi, 2\sqrt{\xi}) d\xi \\ = 2 \sum_{n=0}^{\infty} (-)^n \omega^{-n} U_{n+s+2}(2wx, 2\sqrt{x}) g_n(z, r) \end{aligned} \quad (22)$$



The transformation of this result into those involving  $g_n(z)$  and Bateman's  $k$ -function can be easily obtained by (i) putting  $r = 0$  and (ii) assuming  $z$  to be a positive integer.

IV. So far we have been considering the generalized polynomial given by the generating function (4). If we take (3) which defines  $g_n(m)$  for integral values of  $n$  and  $m$  and change  $u$  into  $-u$  and then replace  $u$  by  $\frac{1}{p}$ , we get

$$\frac{2p(p-1)^{n-1}}{(p+1)^{n+1}} = \sum_{m=0}^{\infty} (-)^{m+1} p^{-m} g_n(m) \quad (23)$$

This can be interpreted by using (7) and<sup>8</sup>

$$k_{2n}(x) = \frac{2p(1-p)^{n-1}}{(1+p)^{n+1}} \quad n > 0 \text{ and an integer} \quad (24)$$

We obtain the expansion of Bateman's polynomial  $k_{2n}(x)$  in terms of Mittag-Leffler's polynomial  $g_n(m)$  as

$$k_{2n}(x) = \sum_{m=0}^{\infty} (-)^{m+n} \frac{x^m}{m!} g_n(m) \quad (25)$$

Again if we replace  $u$  in (3) by  $\frac{1-p}{1+p}$ ,  $p$  positive, we get after simplification

$$\frac{1}{p^n} = \frac{2p}{1-p^2} g_n(0) + \sum_{m=1}^{\infty} \frac{2p(1-p)^{m-1}}{(1+p)^{m+1}} g_n(m)$$

But  $g_n(0) = 0$  as can be easily determined from (3). Hence we get after interpretation with the help of (7) and (24)

$$\frac{x^n}{n!} = \sum_{m=1}^{\infty} k_{2n}(x) g_n(m) \quad (26)$$

an expansion of  $x^n$  in terms of Bateman and Mittag-Leffler polynomials.

Finally if we multiply (23) by  $e^{-\frac{1}{p}} p^{-s}$  and interpret with the help of the product theorem, (24) and (16) we get

$$\int_0^s \xi^{\frac{1}{2}(s-1)} J_{s-1}(2\sqrt{\xi}) k_{2n}(x-\xi) d\xi = \sum_{m=0}^{\infty} (-)^{m+n} x^{\frac{1}{2}(m+s)} J_{m+s}(2\sqrt{x}) g_n(m) \quad (27)$$

The results involving Lommel functions can be obtained by the method indicated in III.

V. Now we will evaluate an integral involving  $g_n(z)$  and Angelescu's polynomial  $\pi_n(x)$ . We have from the generating function<sup>9</sup> of  $\pi_n(x)$

$$\sum_{t=0}^{\infty} \frac{t^t \pi_t(2x)}{t!} = \frac{1}{1-t} e^{-\frac{2xt}{1-t}} \phi\left(-\frac{t}{1-t}\right) \quad (28)$$

Hence

$$\begin{aligned} \sum_{l=0}^{\infty} \frac{t^l}{l!} \int_0^{\infty} e^{-x} x^{z-1} \pi_l(2x) dx &= \frac{1}{1-t} \phi\left(-\frac{t}{1-t}\right) \int_0^{\infty} x^{z-1} e^{-x} \frac{1+t}{1-t} dx \\ &= \frac{\Gamma(z)}{1-t} \phi\left(-\frac{t}{1-t}\right) \left(\frac{1-t}{1+t}\right)^z \\ &= \Gamma(z) \left[ \sum_{l=0}^{\infty} \frac{t^l \pi_l(0)}{l!} \right] \left[ 1 + \sum_{n=1}^{\infty} (-)^n t^n g_n(z) \right] \end{aligned}$$

using (26) and (1). Therefore by equating the coefficients of  $t^l$  on both sides we get

$$\int_0^{\infty} e^{-x} x^{z-1} [\pi_l(2x) - \pi_l(0)] dx = \Gamma(z) \sum_{r=0}^{\infty} \frac{l!}{r!} (-)^{l-r} \pi_r(0) \cdot g_{l-r}(z) \quad (29)$$

VI. Belorizky<sup>10</sup> has given some trigonometrical expansions obtainable from (1). We will conclude this paper by giving a few more expansions of trigonometrical functions in terms of  $g_n(z, r)$ . For this change  $t$  into  $it$  in the generating function (4), and separate into real and imaginary parts, we will get

$$(1+t)^{2r} \cos [(2z+r) \tan^{-1} t] = \sum_{n=0}^{\infty} (-)^n t^{2n} g_{2n}(z, r) \quad (30)$$

$$(1+t)^{2r} \sin [(2z+r) \tan^{-1} t] = \sum_{n=0}^{\infty} (-)^n t^{2n+1} g_{2n+1}(z, r) \quad (31)$$

For  $r=0$  we get simpler forms, viz.,

$$\cos (2z \tan^{-1} t) = \sum_{n=0}^{\infty} (-)^n t^{2n} g_{2n}(z) \quad (32)$$

$$\sin (2z \tan^{-1} t) = \sum_{n=0}^{\infty} (-)^n t^{2n+1} g_{2n+1}(z) \quad (33)$$

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## ŚIVABHŪTI AND ŚIVĀRYA

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ACCORDING to the often quoted verses from *Āvaśyaka Mūla Bhāṣya*<sup>1</sup> the schism of the *Boṭikas* took place 609 years after the Nirvāṇa of Mahāvira at Rahavīrapur under the guidance of Śivabhūti. The *Boṭikas* are frequently identified with the Digambaras, and the Śvetāmbara paṭṭāvalis accordingly assign the date 609 years after Nirvāṇa for the foundation of the Digambara sect.

Let us see whether this Śivabhūti is identifiable with any personality in the Śvetāmbara and the Digambara hierarchies. Looking into the *Kalpasūtra Sthavirāvalī* which is the oldest succession list of *Ācāryas* preserved by the Śvetāmbaras, we find mention of *Sivabhūi* who succeeded *Dhanagiri* the successor of *Faggumitta*.<sup>2</sup> This *Sivabhūi* appears to me to be identical with Śivabhūti of the *Mūla Bhāṣya* for the following reasons:—

1. The names are identical.

2. Though the *Sthavirāvalī* does not mention the time of the *Ācāryas*, other paṭṭāvalis which mention the time tend to show that *Sivabhūi* must have flourished at the time mentioned by the *Mūla Bhāṣya* for Śivabhūti.

<sup>1</sup> These verses are as follows:—

छव्वाससयाहं नवुत्तराहं तहया सिद्धिं गयस्स वीरस्स ।  
तो बोडिआण दिट्ठी रहवीरपुरे समुप्पजा ॥ १४५ ॥  
रहवीरपुरं नगरं दीवगमुज्जाणमज्जकण्हे य ।  
सिवभूइस्सुवहिम्मी पुच्छा थेराणा कहणा य ॥ १४६ ॥  
ऊहाए पणत्तं बोडिअ सिवभूइउत्तराहि (-उत्तरोद्दि ?) इमं ।  
मिच्छादंसणमिणमो रहवीरपुरे समुप्पजं ॥ १४७ ॥  
बोडिअसिवभूइओ बोडिअलिगस्स होइ उप्पत्ती ।  
कोडिअकुट्टवीरा परंपराफासमुप्पजा ॥ १४८ ॥

These verses may be literally translated as follows:—When six hundred and nine years had passed after Vira (Mahāvira) attained salvation, there was founded the sect of *Boṭikas* at Rahavīrapura. There was the town of Rahavīrapur, the garden *Dipaka* and *Ārya Kapha* (*Kṛṣṇa*); Śivabhūti raised the question about the *Upadhi* (a monk's equipment), and the *Theras* expressed their views on the subject. As a result of the discussion the *Boṭika* was preached by monks led by Śivabhūti; thus the false doctrine was born at Rahavīrapura. From *Boṭika* Śivabhūti the distinguishing mark of *Boṭika* was born; *Kauṇḍinya-kuṭṭa-viras* were born associated with this lineage.

<sup>2</sup> थेरस्स णं अज्जधणगिरिस्स वासिट्ठसगुलस्स अज्जसिवभूइ थेरे अंतेवासी कुच्छसगुत्ते ॥ १९॥ \* \*

वंदामि फग्गमित्तं च गोयमं धणगिरिं च वासिट्ठं ।  
कुच्छं सिवभूइं पि य कोसिय कुज्जंत कण्हे य ॥ १ ॥

3. The Mūla Bhāṣya associates Śivabhūti with another personality called *Kaṇha* who is also mentioned in the metrical part of the Sthavirāvali along with Śivabhūi.

4. *Samayasundara* in his commentary on the Sthavirāvali states that it was a pupil of Śivabhūi Sk. Śivabhūti named *Boṣaka* who founded the Digambara sect in the year 609 after Nirvāṇa.<sup>3</sup> This is in direct conflict with the account given to us by the Mūla Bhāṣya as well as a series of commentators like Jinabhadra Gaṇi, Koṭyācāra and Malayagiri, and appears to have been deliberately designed to save Ārya Śivabhūti, who was adored in the Sthavirāvali, from any association with the schism of the *Boṣikas*; but it makes the identification complete.

We may now attempt to see whether this Ārya Śivabhūti is identifiable with any person in the Digambara sect. The name at once suggests to us the author of the Ārādhana or Bhagavatī Ārādhana as a probable person for the identification, because his name as mentioned in the book itself is *Sivajja* Sk. *Śivārya* whose three teachers were *Ajja Jinaṇandi Gaṇi*, *Savva-gutta Gaṇi* and *Ajja Mittanandi*.<sup>4</sup> These names show clearly that *Ajja* was not a part of the proper name but an honorific title which is given to all the Ācāryas in the Sthavirāvali. Therefore the name *Sivajja* is equivalent to *Ārya Śiva* which is not difficult to identify with *Ārya Śivabhūti*, because an omission of the latter part of a name is quite normal as in the case of Rāma, Kṛṣṇa and Bhīma which stand for Rāmacandra, Kṛṣṇacandra and Bhīmasena respectively. The title Ārya, again, though so normal in the Sthavirāvali is unusual in the Digambara lists of Ācāryas and is found used only very seldom. Śivārya's work Ārādhana or Mūlārādhana again occupies a unique place in the Digambara literature. It does not belong to Kundakunda's school<sup>5</sup>

<sup>3</sup> शिवभूतिशिष्यः एको बोटकनामऽभूत् । तस्मात् वीरात् सं. ६०९ वर्षे बोटकमतं जातं दिगम्बर-मतमित्यर्थः ।

<sup>4</sup> अज्जजिणणंदिरणि-सव्वगुत्तगणि-अज्जमित्तणंदीणं ।  
अवगमिय पादमूले सम्मं सुत्तं च अत्थं च ॥ २१६१ ॥  
पुब्बायरियणिबद्धा उवजीवित्ता इमा ससत्तीए ।  
आराहणा सिवज्जेण पाणिदलभोइणा रहदा ॥ २१६२ ॥

<sup>5</sup> This is evident from the fact that Śivārya does not make nakedness as the absolute rule for monks, but allows exceptions in special cases for which the following verses may be noted :—

जस्स वि अब्बभिचारो दोसो तिहुणिओ विहारम्मि ।  
सो वि हु संथारगदो गेण्हज्जोस्सगिर्यं लिगं ॥ ८० ॥  
आवसथे वा अप्पाउरगे जो वा महद्धिओ हिरिमं ।  
मिच्छजणे सजणे वा तस्स हु होज्ज अब्बादियं लिगं ॥ ८१ ॥

and there is no evidence to prove that it belongs to a period subsequent to Kundakunda. But on the other hand, it cannot be dissociated from the Digambara school to which it traditionally belongs. One of its commentators *Aparājita Sūri*<sup>6</sup> has been called the 'Crest-jewel of the *Ārātiya* teachers' and the *Ārātiyas* have been recognised by the author of the *Sarvārtha-siddhi* as authoritative as an omniscient Tīrthaṃkara or Śruta-kevalī.<sup>7</sup> Other commentators of the same work are *Amitagati* and *Āśādhara* who are reputed authors of the Digambara sect.<sup>8</sup> Then again, the word *Nandi* forming part of the names of Śivārya's two teachers definitely associates the work with the Digambaras amongst whom the *Nandi Saṃgha* was a very ancient organisation and *Nandi* as a name-ending was quite popular, while it is not found so in the Śvetāmbara paṭṭāvalīs of the early period at all, and even at a later date it was rarely used, since, going over all the available Śvetāmbara lists I could find only two such names, *Indranandi* and *Udayanandi*, both being later than the fifteenth century.<sup>9</sup>

One of the three teachers of Śivārya was *Sarvagupta Gaṇi*. No wonder if this person be identical with the teacher of the same name mentioned in Śravaṇa Belgola inscription No. 104 (254) in succession with the four teachers of *Ācārāṅga* and prior to Kundakunda.<sup>10</sup> In *Bhāva-pāhuḍa*, verse 53, Kundakunda mentions with great respect one Śivabhūti who attained purity and omniscience by proclaiming 'Tuṣa-māṣa' (the simile of the chaff and the grain).<sup>11</sup> If we take into consideration the context, it is obvious that a saint who attained purity of thought, but did not confirm to the rules of outer conduct, was meant there. This Śivabhūti appears to be identical with the one mentioned in the Sthavirāvali and the author of the *Ārādhanā* in which we find a verse using the simile of the chaff and the

<sup>6</sup> चन्द्रनन्दिमहाप्रकृत्याचार्यप्रशिष्येण आरातीयसूरिचूडामणिना नागनन्दिगणिपादपद्मोपसेवाजात-  
मतिलवेन बलदेवसूरिशिष्येण जिनशासनोद्धरणधीरेण लब्धयशःप्रसरेणापराजितसूरिणा श्रीनन्दिगणिना-  
वचोदितेन रचिता । (विजयोदया टीका)

<sup>7</sup> त्रयो वक्तारः सर्वज्ञतीर्थकरः इतरो वा श्रुतकेवली आरातीयश्च । (स. सि. १, २०).

<sup>8</sup> For other commentaries on the work, see Pandit Nathuram Premi's—

'जैन साहित्य और इतिहास' p. 23 ff.

<sup>9</sup> पट्टावली-समुच्चय—मुनि दर्शनविजय कृत, pp. 39 and 67.

<sup>10</sup> सर्वज्ञः सर्वगुप्तो महिधर-धनपालो महावीरवीरो । इत्याद्यानेकसूरिष्वथ सुपदमुपेतेषु दीव्यतपस्याशास्त्रा-  
धारेषु पुण्यादजनि स जगतां कोण्डकुन्दो यतीन्द्रः ॥ १३ ॥

<sup>11</sup> तुसमासं घोसतो भावविमुद्धो महाणुभावो य ।

नामेण य सिवभूर्ह केवलणाणी फुडं जाओ ॥ ५३ ॥ (भा. पा.)

grain in order to emphasise the necessity of inner purification.<sup>12</sup> It is this verse that makes the reference in the *Bhāva-pāhuḍa* sufficiently intelligible.

This simile of the chaff and the grain is again implied in the *Āvaśyaka Nirukti* of Bhadrabāhu. According to it there were seven schisms during the period of 614 years which elapsed after the omniscience of Lord Mahāvira. The last of these schisms was created 584 years after Nirvāṇa, at Daśapura, by Goṣṭhāmāhila who preached that the soul has contact with *Karma*, but it is not bound by it.<sup>13</sup> The author of the *Mūlabhāṣya* explains it as follows:—As a coat is in contact with its bearer, but it does not tie him up, even so the relation between the soul and the *Karma* is of contact and not of bondage.<sup>14</sup> *Malayagiri* in his commentary to the *Āvaśyaka Nirukti* explains that *Ārya Rakshita* left behind three pupils, namely, *Lurhalikā Puṣyāmītra*, *Goṣṭhāmāhila* and *Phaggu Rakshita*. *Goṣṭhāmāhila* had a gift of speech, still *Ārya Rakshita* had nominated, not him, but *Durhalikā Puṣyamītra* as his successor. This annoyed *Goṣṭhāmāhila* to such an extent that he left the community in disgust.<sup>15</sup> According to the *Sthavirāvali*, *Puṣyamītra* was succeeded by *Phaggu* (*Phaggu Rakshita*) who in his turn was succeeded by *Dhanagiri* whose successor *Śivabhūti* was. It is not unlikely, therefore that Śivārya had in mind the aforesaid teaching of *Goṣṭhāmāhila* when he wrote in the *Bhagavatī Ārādhanā* that the inner dust of the rice grain could not be cleaned so long as the outer coating was not removed; and *Kundakunda* in his *Bhāva-pāhuḍa* had praised this very principle of purity upheld by Śivārya.

Similarly, another verse of *Bhāva-pāhuḍa* makes mention of a pure-minded Śramaṇa *Sivakumāra*, who, though surrounded by a number of damsels, remained chaste-minded and thus could get over the cycle of

<sup>12</sup> अहं कुण्डलो ण सक्को सोधेत्तुं तंदुलस्स सत्तुलस्स ।

तह जीवस्स ण सक्कं मोहमलं संगसत्तस्स ॥ ११२० ॥ (भ. आ.)

<sup>13</sup> बहुरय पएस अम्वत्त समुच्छ दुग तिग अबद्धिआ वेव

सत्तेए निण्हगा खलु तित्थम्मि उ वद्धमाणस्स ॥ ७७८ ॥

बहुरय जमालिपभवा जीवपएसो य तीसगुत्ताओ ।

अम्वत्ताऽऽसाढाओ सामुच्छेआऽऽसमित्ताओ ॥ ७७९ ॥

गंगाओ दोकिरिया खलुगा तेरासिआण उप्पत्ती ।

धेरा य गुट्ठमाहिल पुट्ठमबद्धं परुविति ॥ ७८० ॥ आदि (भा. नि.)

<sup>14</sup> पुट्ठो जहा अबद्धो कंचुइणं कंचुओ समजेइ ।

एवं पुट्ठमबद्धं जीवं कम्मं समजेइ ॥ १४३ ॥ मू. भा.)

<sup>15</sup> See—आवश्यक निर्बुक्ति गाथा ७७७ कृति.

birth and death.<sup>16</sup> If we compare this with verses 1108–1116 of the *Bhagavatī Ārādhana*<sup>17</sup> where very sound advice is given for avoiding the poison of passions even while in the midst of sensual allurements, then we begin to suspect that probably here also Kundakunda had in mind Śivārya himself. The teaching of a saint could metaphorically be attributed to his conduct also.

The above discussion leads us to the following conclusions :—

1. Śivabhūti who is said to have founded the Boṭika sect formerly belonged to the line of *Sthaviras* commemorated in the *Sthavirāvalī*.
2. He later on joined the *Nandī Saṃgha* whose sacred books he studied from three teachers, namely, Jinanandi, Sarvagupta and Mitranandi.
3. When in his turn he became the head of the organisation he probably introduced some changes on account of which his followers were called the *Boṭikas*.
4. He wrote the *Ārādhana*, or *Bhagavatī Ārādhana* on the practice of the monks in which he calls himself Śivārya. This work reveals a phase of religion in the Digambara community which is earlier than Kundakunda's teachings.
5. The pure-minded *Śramaṇa Śivabhūti* mentioned by Kundakunda in his *Bhāva-pāhuḍa* was probably identical with the aforesaid Śivabhūti or Śivārya.

The next question that interests us is whether the place where Śivabhūti is said to have first instituted his organisation could also be identified. Its association with the Digambaras suggests to us Southern India as the possible part of the country where the place called *Rahavīrapura* by the author of the *Mūla Bhāṣya* may be looked for—particularly that part of the South West from Gujrat to Kokan which formed the scene of activity in connection with the compilation of the *Śaṅkhaṇḍāgama Sūtras*.<sup>18</sup> Looking over this area, one finds a place called *Rāhuri*, now a Railway Station in the Ahmadnagar district, being the third Station and only 15 miles from Ahmadnagar towards

<sup>16</sup> भावसवणो य धीरो जुषईयणवेडिओ विसुद्धमई ।  
गामेण सिवकुमारो परिससंसारिओ जादो ॥ ५१ ॥ (भा. पा.)

<sup>17</sup> उदयम्मि जायवड्ढिय उदएण ण लिप्पवे जहा पडमं ।  
तह विसएहि ण लिप्पदि साहु विसएसु उडिओ वि ॥ ११०८ ॥  
सिगारतरंगाए विलासवेगाए जोब्बणजलाए ।  
विहसियफेगाए मुणी गारिणईए ण जुईति ॥ ११११ ॥ etc.

Manmad. I feel inclined to identify this place with the *Rahavīrapura* (-*Pūrī*) of Śivabhūti. Philologically there is no difficulty in the corruption of *Rahavīrapurī* in to *Rāhurī*.

It now remains to explain the word *Boḍia* or *Boṭika*. Samayasundara's explanation that it was the name of a pupil of Śivabhūti is not supportable by any evidence. A name like *Boṭika* is nowhere to be found in the Śvetāmbara or Digambara lists, and no other commentator supports the view. On the contrary, the *Mūla Bhāṣya* uses the word as an adjective of Śivabhūti and of another word *Līṅga*, which indicates that *Boṭika* signified some characteristic mark introduced for the first time by Śivabhūti. The *Mūla Bhāṣya* itself stated that Śivabhūti discussed with his associates the question of *upadhi* or an article which the monks should possess. Looking into the *Mūlārādhana* I find Śivārya laying great emphasis upon the necessity of the monks' making use of an article (*Pratīlekha*) for removing minute living beings, during all their activities such as walking, taking up things or placing them on the ground, etc. He calls this article the mark (*ciṅha*) and the characteristic feature (*Līṅga*) of asceticism. The requisites of this article are also specified that it should not be capable of being contaminated by dirt or sweat and it should be soft, tender and light.<sup>18</sup> By these qualities as well as by the well-known practice of the Digambara monks we can understand that what Śivārya was recommending to his followers was a bunch of feathers (*Picchikā*). It appears to me that at that time the quail's feathers came handy and they were utilised by Śivārya and his followers. The word for quail in Sanskrit is *Vartaka* which in Prakrit would normally give us the form *Vaṭṭaka*, *Vāṭaka*, *Vāḍaka* and *Vāḍaa*. This word may have been easily developed into *Voṭaka*, *Boṭika* and similar other forms on the analogy of the word *Koṭika*, *Kauṭika* or *Koḍia* which was applied to the community of the Śvetāmbaras, according to the *Paṭṭāvalī*, since the time of Ārya Suhasti.

<sup>18</sup> See षट्संज्ञागम, Vol. I, Intro. p. 13 ff.

<sup>19</sup> इरियादानिजेवे विवेगठणे णिसोयणे सयणे ।  
उण्वत्तण-परियत्तण-पसारणाओटणामासे ॥ ९८ ॥  
पडिलेहणेण पडिलेहिज्जइ चिण्हं य होइ सयपक्खे ।  
विस्सासियं च लिंमि संजयपडिरुवदा नेव ॥ ९९ ॥  
रज-सेवाणमगहणं मइवसुकुमालदा लहुत्तं च ।  
जत्थेदे पंच गुणा तं पडिलिहणं पसंसंति ॥ १०० ॥



## SIGNIFICANCE OF PĀNINI'S SŪTRA VI-i-92

BY PROF. S. P. CHATURVEDI, M.A.

*Nagpur*

IN a recent issue of *Indian Culture* (Vol. VIII, No. 4, p. 397) Dr. Batakrishna Ghosh has criticised a statement in my article (*Nagpur University Journal*, 1941, No. 7, p. 49) "On references to early grammarians in the *Aṣṭādhyāyī* and the forms sanctioned by them", wherein I had remarked that his evidence "is after Drāviḍapṛāṇyāma procedure". Among many other things, I showed in that article that "Pāṇini's purpose in mentioning names of early grammarians (Pūrvāchāryas) is not *merely* to indicate the optional nature of those sūtras, but to record the opinion of other grammarians about usages, which, despite Pāṇini's implied disagreement, were not unknown in the then language". This view is not materially different from that of Dr. Ghosh on the subject. But as regards the evidence of Dr. Ghosh for the above conclusion, I ventured to suggest that a more direct and positive evidence was available in the sūtra (VI-i-92). He does not agree with my suggestion and thinks that the sūtra can at the best suggest but never prove the point.

In a discussion of this nature it is of fundamental importance that the view-point of the Pūrvapakṣha should be clearly borne in mind before adducing the evidence of the Uttarapakṣha. What is the Pūrvapakṣha on the subject here? As stated in my article the Pūrvapakṣha is that according to the traditional interpretation, mention of the Pūrvāchāryas in the P. sūtras is merely to indicate the optional character of those sūtras (*Āchāryagrahaṇam Vibhāṣhārtham*). Whenever a Pūrvāchārya's name is mentioned in a sūtra, the sūtra should be regarded as optional in application and thus there is no special significance attached to such mentions. Now to disprove this Pūrvapakṣha view, the Uttarapakṣha should point out a sūtra wherein the Pūrvāchārya could not have been mentioned for making the sūtra optional. The sūtra VI-i-92 is such an instance in which besides mentioning a Pūrvāchārya the usual word VĀ indicating option, is also used. This sūtra is therefore a direct and positive evidence to disprove the Pūrvapakṣha view. The Pūrvapakṣha view being thus discredited, we can establish the Uttarapakṣha that there is special significance in mentioning Pūrvāchāryas' names. When a sūtra sanctions a form in the name of a Pūrvāchārya, the most natural interpretation would be to regard the form correct according to that grammarian only. When more than one Pūrvāchārya differs from

him, Pāṇini mentions all of them (VII-iii-99, VIII-iv-67). The mention of early grammarians should therefore not be equated in meaning with the optionality of the sūtra—though for practical purposes of knowing generally sanctioned or unsanctioned forms, it may amount to result in the optionality of such sūtras.

The real purpose then of Pāṇini in mentioning a Pūrvāchārya in VI-i-92 is to indicate that the *vrddhi* laid down in VI-i-91 is optional when a *Sup-root* follows in the opinion of Apishali. Thus in this sūtra, as Dr. Ghosh also says, neither VĀ nor Āpishaleḥ is redundant. But it should be noted that it is only on our acceptance of the Uttarapakṣha view that we get the above natural meaning of the sūtra and appreciate the significance of the words there. Otherwise according to the Pūrvapakṣha view the sūtra would mean that the *vrddhi* is optional, when *Sup-root* follows; and the mention of Apishali is merely *Pūjārtha* (cf. *Āpishaligrahaṇam Pūjārtham. Veti hyucyata eva*—Kāshikā on the sūtra). It was in this setting of Pūrvapakṣha and Uttarapakṣha views that I suggested my evidence as more direct and positive than that of Dr. Ghosh. It is none of the business of the Pūrvapakṣha to interpret the sūtra according to the Uttarapakṣha and then to assert that the sūtra is not an absolute evidence in favour of the Uttarapakṣha. Dr. Ghosh's contention that this sūtra can at best suggest but never prove the point is therefore not right.

I do not think it necessary to hammer again the second point referred to in Dr. Ghosh's note, for he still maintains that whenever Pāṇini specifically mentions a Pūrvāchārya for his views on particular grammatical problems, the revered one is mentioned at the end of the sūtra concerned. On my pointing to the S. III-iv-111 as going against his theory, he is inclined to italicise the word *for* in his statement and does not try to see justification in Patanjali's interpretation of the sūtra. If I draw his attention to other sūtras where Pāṇini mentions Pūrvāchāryas by general designations (such as Prāchām, Udīchām, etc.), he may italicise the word *specifically* also in his statement. And even then if some sūtras (VI-i-12 and I-i-16) still persist to stare at his theory, Dr. Ghosh will cut the former into two parts—Yogavibhāga—despite Patanjali's interpretation, and connect the word *shākalyasya* in the latter with *anārṣhe itau* and not with *matena* as is usually interpreted in *all* such Pūrvāchārya-mentioning sūtras. It does not matter much if the word *anārṣhe* there is rendered redundant or the grammarians are left a-guessing about the discovery of *Ārṣha iti* of Shākalya. What really matters is that the theory must be made to appear as standing "on its own legs" though wooden.

## THE LITERARY SIGNIFICANCE OF SPRAT'S *HISTORY OF THE ROYAL SOCIETY*

BY GEORGE JACOB, M.A. (TORONTO) FIRST CLASS HONOURS

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THOMAS SPRAT (1636-1713), Bishop of Rochester, is one of the prominent writers of the Restoration period. He is not a profound thinker, but an extremely interesting and significant writer, whose works represent very well "the climate of opinions" in the Restoration period. His most notable work is the *History of the Royal Society*, first published in 1667. It was a very popular book in the seventeenth and eighteenth centuries, and was often reprinted down to 1764. A French translation appeared in 1669. To the student of seventeenth century literature, it is a most valuable document, containing some of the main currents of thought in the Restoration period. Basil Willey, in his *Seventeenth Century Background*, says: "I know of no work which more fully illustrates the climate of opinion in post-Restoration days than Sprat's *History of the Royal Society*."<sup>1</sup> A modern critical edition of this book is needed, and the present writer hopes to bring out one in due course. In this paper, however, he intends to dwell only upon some aspects of the literary importance of this book. In the first place, being the first history of the Royal Society, it has great significance as a historical document. Secondly, it is a brilliant exposition of the new philosophy, the study of Nature, as advocated by Bacon. In the third place, it deals with the very important question of the relationship between natural knowledge and religion. Fourthly, it has a distinct place in the seventeenth century controversy regarding the relative merits of the ancients and moderns. Lastly, this book is an important landmark in the evolution of the workaday prose style that came into vogue in the Restoration period.

Since we are concerned only with the literary significance of Sprat's great work, a discussion on the merits and demerits of the book, as a history of the Royal Society, is out of place in this paper. Also, Sprat's invaluable contribution to the cause of modern English prose style is not considered here, because a paper on that subject has already been published by the present writer in the 8th number of the Nagpur University Journal. This paper will, therefore, deal with Sprat's *History of the Royal Society* with

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<sup>1</sup> Willey, *Seventeenth Century Background*, p. 206.

reference to three questions only—(1) what the Royal Society stood for, (2) the relationship between natural knowledge and religion, and (3) the seventeenth century controversy regarding the ancients and moderns.

The seventeenth century marks the beginnings of the modern world. Confining our attention to England alone, we notice that it was in 1600 that William Gilbert brought out his famous work, *De Magnete, Magneticisque Corporibus*. It is the first great work on Physical Science produced in England. Gilbert has therefore been rightly called "the first real physicist and the first trustworthy methodical experimenter".<sup>2</sup> He performed a number of experiments, each one of which was devised to answer a particular question. A record of these questions and experiments is contained in his work. Thus he was a pioneer in that he adopted, for the first time in England, the method of answering questions by experimental tests. Gilbert was conscious of the fact that he was introducing "a new style of philosophising". This is brought out very clearly in the full title of his work, *On the Magnet, on Magnetic Bodies, and on the Earth as a Great Magnet, a New Physiography, Demonstrated by Many Arguments and Experiments*. He refers to arguments and experiments as two distinct ways of establishing the truth of a particular matter; and in so doing, he has led the way towards the true scientific method. He recognizes that he could not establish his theory of magnetism by the argumentative method. He needed the assistance of experiments. In his preface, he said, "To you alone, true philosophers, ingenuous minds, who not only in books but in things themselves look for knowledge have I dedicated these foundations of magnetic science—a new style of philosophizing."<sup>3</sup> Thus already we are at the parting of ways between scholastic philosophy and experimental science. Before the commencement of the modern era, knowledge was regarded as a whole; and the term philosophy was used to denote any kind of inquiry. But the experimental tendencies of the pioneers of modern science—men like Gilbert and Galileo—led to a divorce between exact science on the one hand, and speculative philosophy on the other. There was growing slowly a conviction of the necessity of the study of Nature by means of direct experiment.

Of all the great names associated with this growing mental unrest, the most important is that of Francis Bacon. According to Bacon, the defect of traditional learning was its reliance on a few old books, instead of investigating things themselves. He says, "This kind of degenerate learning didst

<sup>2</sup> Sorley, *A History of English Philosophy*, p. 13.

<sup>3</sup> Gilbert, William, *On the Loadstone and Magnetic Bodies, and on the Great Magnet, the Earth*, trans. by P. F. Mottelay, p. xlix.

reign chiefly amongst the schoolmen: who, having sharp and strong wits and abundance of leisure, and small variety of reading, . . . did out of no great quantity of matter and infinite agitation of wit, spin out unto us those laborious webs of learning, which are extant in their books."<sup>4</sup> Bacon described the right attitude to books as follows: "Read not to contradict and confute; nor to believe and take for granted; nor to find talk and discourse; but to weigh and consider."<sup>5</sup>

Bacon has been designated as the 'Father of Experimental Philosophy'. He believed that man's sovereignty over Nature could be attained only through the acquirement of a true understanding of Nature. The Royal Society was the practical outcome of this new spirit. How far Bacon's method and outlook influenced the principles and methods of working of the Royal Society is a very important question. Bacon looked upon Nature as being overwhelmingly complex. In the *Novum Organum*, he put forward his new method by which man might find his way through the intricacies of Nature. He modified the traditional induction of the logicians. In fact in his hands, induction became almost a new method because he introduced for the first time the elimination of the non-essential. The Royal Society accepted the inductive method of Bacon. But the significant thing is that it went beyond Bacon's 'Novum Organum'. This was because it felt that Bacon had not included certain essentials in his system. For example, he assigned no proper place to the use of the trained imagination in scientific experiment. Also there was no sufficient appreciation of the deductive method of reasoning. With regard to both these factors, the Royal Society went far beyond Bacon. This comes out very clearly in Sprat's *History of the Royal Society*. Sprat makes certain very significant observations about Bacon. "The third sort of new philosophers have been those who have not only disagreed from the Ancients, but have also proposed to themselves the right course of slow and sure experimenting. . . . And of these, I shall only mention one great man, who had the true imagination of the whole extent of this enterprise, as it is now set on foot; and that is Lord Bacon."<sup>6</sup> After pointing out many of Bacon's excellences, Sprat makes the following comment: "His rules were admirable, yet his History is not so faithful as might have been wished in many places. He seems rather to take all that comes than to choose, and to heap rather than to register."<sup>7</sup> This seems to be a very accurate estimate of Bacon's contribution to the method and

<sup>4</sup> Bacon, "Advancement of Learning," Wolf, *History of Science and Technology*, p. 633.

<sup>5</sup> Bacon, "Essays on Studies," Wolf, *ibid.*, p. 633.

<sup>6</sup> Sprat, *History of the Royal Society*, p. 35.

<sup>7</sup> *Ibid.*, p. 36.

outlook of the Royal Society. As has already been pointed out, Bacon was the first to formulate the method of induction, employed by the scientists. This is, obviously, an essential requisite in all scientific investigation, being the only means of collecting the necessary data. But it is only a first step. After having heaped up his data, the scientist tries to arrive at certain general principles, applicable to all these isolated instances. The method of induction alone is not sufficient here. In fact, some of the most important scientific laws have been arrived at as a result of a judicious use of imagination, along with the method of induction. Mendeleeff's enunciation of the 'Periodic Law' of Chemical Elements is a case in point. From some of the experiments of his predecessors in the field, as well as from his own investigations, he noted that if all the chemical elements were arranged in the order of their atomic weights, the eighth element showed properties similar to those of the first. Thus he got the idea of the periodic recurrence of elements belonging to the same group. There were, however, a number of cases where the observed facts did not fit in with the Law. For example, in certain cases, instead of the eighth element, it was the seventh element that showed properties similar to those of the first. But Mendeleeff had the imagination to see that it might have been due to some element which had not yet been discovered. Therefore, he arranged all the elements according to his Law, leaving gaps wherever necessary. Then, on the basis of his Law, and by applying the principle of Deduction, he predicted the properties of these missing elements. This forecast of their properties was a great help in actually discovering them later on. And when they were discovered, they fitted exactly into the gaps which Mendeleeff had left for them. The properties of these elements came astonishingly close to what he had predicted about them. Here is a case of a scientist going beyond the limits of observed data, and the rigid application of the method of induction. This particular instance has been cited, because it is one of the classic examples in chemistry which go to prove the great significance of imagination and the principle of deduction in the pursuit of scientific investigation.

Again, it was Newton's fertile imagination that helped him to pass from the falling apple to the falling moon.

There is no need to labour this point any further. It is now accepted on all hands that imagination is an essential attribute of the scientific mind that makes for progress. The following quotation from Richard Gregory, one of the great Champions of the cause of science, will illustrate this point very clearly. "The poet perceived in Nature resemblances and meanings which are hidden to the ordinary mind. The truly great man of science likewise uses imaginative insight in his theoretical conceptions, and it

enables him to project known facts into unknown regions and see the picture produced upon the new mental plane. Many great discoveries have been made by this scientific use of the imagination; but in all cases they have depended upon a basis of fact revealed by observation or experiment."<sup>8</sup>

There was another significant drawback in Bacon's approach to the whole question. He did not value scientific knowledge for its own sake. To him, it was only an instrument for improving the lot of mankind. Or in other words, he was interested only in applied science. Every student of science knows that almost every important invention in the field of applied science is the outcome of some discovery in the realm of pure science. When Michael Faraday discovered that if a magnet is brought suddenly near a coil of wire, a slight current of electricity is produced in the wire, this was a discovery in the field of pure science, which had apparently no utilitarian value. In fact, the experiment was not very impressive; and a lady probably expressed the feeling of most of the audience when she asked afterwards, "But, Professor Faraday, even if the effect you explained is obtained, what is the use of it?" In one sense, the lady was right. The discovery, as such, had no immediate utilitarian value at all. But out of this apparently useless discovery, there grew up the whole edifice of electro-magnetism. What is true of electro-magnetism is equally true of all great inventions in the field of applied science. Taking into consideration the most outstanding inventions of this century—wireless telegraphy, the telephone, the aeroplane, radium, anæsthetics and antitoxins, spectrum analysis, and X-rays—we notice that each one of these had its foundations in purely scientific work, and was not the outcome of any deliberate attempt to make something of service to mankind. The following quotation from Sir William Tilden will illustrate this point very clearly. Tilden is pointing out that the history of science shows that the greatest advances have been made by those scientists who undertook their inquiries into Nature without any thought of pecuniary reward or practical utility. He says, "The lesson to be derived from the whole of this strange history is one which needs to be continually revived and set in the new light of modern discovery and invention. The lesson is simply that until men begin to observe and interrogate Nature for the sake of learning her ways, and without concentrating their attention on the expectation of useful applications of such knowledge, little or no progress was made. In other words, until a sufficient foundation of pure science has been successfully laid, there can be no applied science. Real progress comes from the pursuit of knowledge for its own sake."<sup>9</sup>

<sup>8</sup> Gregory, *Discovery*, p. 161.

<sup>9</sup> Quoted from Gregory, *ibid.*, p. 237.

It is quite clear then, from these considerations, that there were certain grave deficiencies in Bacon's approach to the whole question. Fortunately, the Royal Society was not too much influenced by Bacon's emphasis on the merely utilitarian aspect of the pursuit of scientific investigation. Their primary object was the improving of natural knowledge through a direct questioning of Nature by means of experiment. This comes out very clearly in the fuller title of the Society mentioned in the Royal Warrant, ordering a Mace to be made for the Royal Society, dated May 23, 1663. In this, the Society is described as the 'Royal Society of London, for improving Natural knowledge by experiment'.

In view of the above-mentioned considerations, the question has sometimes been asked whether Bacon has a right to the high position usually accorded to him in the history of experimental science. Louis Bredvold in her essay on *Dryden, Hobbes, and the Royal Society*, points out that while we should recognize "Bacon's prestige with the Royal Society, and his great influence in fostering the inductive method", we ought not to lose sight of the fact that "the most significant element of the new science was not to be found in the works of Bacon. Bacon had completely ignored mathematics."<sup>10</sup> In this Louis Bredvold was only echoing Whitehead, who had already pointed out that "Bacon completely missed the tonality which lay behind the success of seventeenth century science. Science was becoming, and has remained, primarily quantitative."<sup>11</sup> Thus Bacon's *Novum Organum* left out of account imagination, the method of deduction, the pursuit of knowledge for its own sake, and the science of mathematics. Are we then justified in considering Bacon to be the 'Father of Experimental philosophy'? Probably on this question it may be best to be guided by the views expressed by Bacon's immediate intellectual successors, men such as Boyle, Evelyn, and others, who were mainly instrumental in founding the Royal Society. We find them reflected in Sprat's *History of the Royal Society*, and also in Cowley's *Ode to the Royal Society*. We have already referred to Sprat's verdict on this question. Sprat says, "He (Bacon) seems rather to take all that comes than to choose, and to heap rather than to register." Cowley also holds the same opinion. He compares Bacon to a modern Moses, who led the chosen people to the promised land of knowledge of Nature, and only viewed it imperfectly from afar.

Both Sprat and Cowley were closely associated with the Royal Society from its very inception, and so we are justified in assuming that the opinion

<sup>10</sup> Bredvold, "Dryden, Hobbes, etc.," *Modern Philology*, Vol. XXV, p. 418.

<sup>11</sup> Whitehead, *Science and Modern World*, p. 66.



expressed by these two was the well-considered view of the Royal Society itself. There is no denying the fact that the founders of the Royal Society accepted Bacon upto the point where he ceased to be of service to them, and beyond that they went their own way. They recognized (as Bacon had not) the value of the judicious use of imagination, the pursuit of knowledge for its own sake, and above all, the need for arriving at broad generalisations, known as scientific laws. All these generalisations (they maintained) were to be constantly subjected to the test of experimental verification.

Thus the Royal Society stood for the validity of truth arrived at by experiment, and the reliability of scientific laws. These findings of the Royal Society were made known to the world through Sprat's *History*. Up to that time, literary men, as a rule, did not accept scientific theories as valid. The usual view was that scientific theories are untrustworthy, and that therefore there was not much to choose between two opposing laws. Both must be false. John Donne, in his *First Anniversary*, writes:

Then as mankind, so is the world's whole frame.  
Quite out of joint, almost created lame ;<sup>12</sup>  
And new philosophy calls all in doubt ;  
The element of fire is quite put out ;  
The sun is lost, and th'earth, and no man's wit  
Can well direct him where to look for it.  
And freely men confess that this world's spent,  
When in the planets, and the firmament  
They seek so many new ; they see that this  
Is crumbled out again to his atomies.  
'Tis all in pieces, all coherence gone,  
All just supply, and all relation.<sup>13</sup>

Belief in the reliability of scientific laws must be based on the assumption of the constancy of Nature. Donne, however, questions this fundamental assumption. He thinks that the world's whole frame is quite out of joint, and that all coherence is gone. If there is no coherence in Nature, then all scientific laws are faulty, because they are only futile attempts to find a method in the madness of Nature.

To bring out the full significance of Donne's contention, one may put along side of it the attitude of a modern scientist to the question here under discussion. Sir James Jeans, in *The Universe Around Us*, says: "Science advances rather by providing a succession of approximations to the truth, each more accurate than the last, but each capable of endless degrees of higher accuracy."<sup>14</sup> Jeans goes on to point out that the twentieth century theories

<sup>12</sup> Donne, *The First Anniversary*, ll. 191-92.

<sup>13</sup> *Ibid.*, ll. 205-15.

<sup>14</sup> Jeans, *The Universe Around Us*, p. 8.

in astronomy are very much nearer to the truth than the nineteenth century theories. That is because the twentieth century astronomer has incomparably more facts at his disposal than his predecessors of the nineteenth century. It is clear that the accepted position now is that Nature's laws are inviolable, and the more data we are able to collect, the more reliable will be the scientific theories arrived at. The founding of the Royal Society and the publication of Sprat's *History* established the fact that Nature is unerring, and that scientific laws and theories are generalisations regarding the operations of Nature, and as such they are reliable and valid. A theory that conforms more closely to the observed facts should therefore be accepted in preference to another that does not do so. On this basis, the Copernican view of the universe has therefore to be accepted in preference to the Ptolemaic theory. This was a far-reaching change. The part played by the Royal Society in bringing about this change can be established by pointing out the difference in attitude towards scientific theories between Donne, Sir Thomas Browne and Milton, on the one hand, and Dryden, Evelyn, Temple and others, on the other hand.

Donne's attitude to this question has already been discussed. Now let us turn to Sir Thomas Browne. He was a student of science, and his *Religio Medici* was first published in 1643. Long before that, the Copernican theory of the universe had been established by scientists. Copernicus himself had put forward his theory as early as 1542. Galileo had confirmed it in 1612, and Kepler had advanced all his laws of planetary motion by 1619. Yet Browne, in his *Religio Medici*, accepted the Ptolemaic view of the Universe. He says, "To make a revolution every day is the Nature of the Sun, because of that necessary course which God hath ordained it."<sup>15</sup> Browne accepted the Ptolemaic view of the universe, not because he was unaware of the Copernican theory, but because he did not recognize the significance of the difference. The validity of scientific theories had not yet been established. In fact, Browne is not quite certain even about the constancy of Nature. In *Religio Medici*, after saying that God has given to everything in creation its particular course, he adds: "Yet this rule of His He doth sometimes pervert, to acquaint the World with His Prerogative."<sup>16</sup> It is clear that even Sir Thomas Browne, though he was a student of science, had not entirely accepted the reliability of scientific theories.

The same is true of Milton. Professor Tillyard has shown us very clearly<sup>17</sup> that Milton was greatly influenced by the Baconian philosophy.

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<sup>15</sup> Browne, *Religio Medici*, Everyman's Library Edition, p. 18.

<sup>16</sup> Browne, *ibid.*, p. 18.

<sup>17</sup> Tillyard, *Milton*.

Milton's *Third Prolusion, Contra Philosophiam Scholasticam*, is an open attack on the system of education that was then prevalent in Cambridge and a strong plea for reform. He suggests that experimental knowledge should be substituted for the mediæval system of disputation. In his *Apology for Smectymnus*, he speaks of Bacon as being among 'the greatest and sublimest wits in sundry ages.' Yet, in spite of all this, Milton accepts the Ptolemaic view of the universe as good enough for his great poem—the poem which he knew the 'world will not willingly let die'. He was certainly aware of the Copernican theory of the universe; and he knew about Galileo's discoveries. Why then did he still accept the Ptolemaic view? The answer is not far to seek. He had accepted the Baconian philosophy. But Bacon had not stressed the need for the establishment of scientific laws. The validity of scientific laws, and the infinite difference between a less reliable and a more reliable theory were unknown to Milton. The findings of the Royal Society had not yet become public. It may be pointed out that *Paradise Lost* and Sprat's *History of the Royal Society* were both published in the year 1667. If Milton had known about the findings of the Royal Society, and Sprat's *History*, before he wrote his great poem, perhaps there would have been a change in the cosmology of *Paradise Lost*.

As soon as we turn, from Browne and Milton, to Dryden, Temple and others, we at once notice the distinct difference. Even as early as 1662, Dryden, in his poem, *To The Lord Chancellor Hyde*, accepts the Copernican view of the universe. He writes:

For, as in nature's swiftness, with the throng  
Of flying orbs while ours is borne along,  
All seems at rest to the deluded eye.<sup>18</sup>

Dryden was closely associated with the Royal Society and its founders; and so we are justified in attributing his attitude towards the validity of scientific theories to the influence of the founders of the Royal Society. That was why Dryden in 1662 could accept what Milton had not accepted in 1667. But the publication of Sprat's *History of the Royal Society* gave wide publicity to the accepted view of the scientists. We see signs of this in Sir William Temple, though he was no supporter of the new scientific movement. Indeed he was a champion of the cause of the ancients, and as such, not favourably disposed towards the Royal Society. Yet by 1680, even Temple had evidently accepted the new scientific theory about the universe, for in his *Essay upon the Ancient and Modern Learning*, he says: "There is nothing new in astronomy to vie with the ancients, unless it be the Copernican system; nor

<sup>18</sup> Dryden, *To The Lord Chancellor Hyde*, ll. 113-15,

in physic unless Harvey's circulation of the blood."<sup>19</sup> Though Temple is trying to establish the superiority of the ancients, yet he has to recognize the significance of the Copernican system. Obviously then, by 1680, the Copernican system had been almost universally accepted among English writers.

In France and America, the Copernican theory gained acceptance only very much later. "Well on into the eighteenth century, the ancient University of Paris taught that the motion of the earth round the sun was a convenient but false hypothesis, while the newer American Universities of Harvard and Yale taught the Ptolemaic and Copernican systems of astronomy side by side as though they were equally tenable."<sup>20</sup> But in England, as we have already seen, by the last quarter of the seventeenth century, almost all writers had accepted the Copernican theory.

This general acceptance of the new attitude to scientific laws was a sudden change. Attention has already been drawn to the fact that towards the middle of the seventeenth century, even a man like Sir Thomas Browne, who was directly connected with the study of Science, was prepared to accept the Ptolemaic theory. Therefore this great change which came about in the attitude of English literary men can, to a very great extent, be attributed to the Royal Society, and particularly to the publication of Sprat's *History of the Royal Society*, which gave wide publicity to what was before then known only to a limited group.

Another important consequence arising out of the publication of Sprat's *History of the Royal Society* also deserves to be noted. We have already pointed out that the Royal Society had accepted the judicious use of the imagination. Only, imagination had to be confirmed by reason. Bacon, on the other hand, had thoroughly discredited imagination. According to him, poetry dealt only with a world of shadows. He did not recognise the creativeness of poetry. But regarding this question, Sprat held an altogether different opinion. In his poem entitled, *Upon the Poems of Abraham Cowley*, Sprat writes:

Cowley ! What God did fill thy breast,  
And taught thy hand to endite ?  
For God's a poet too,  
He doth create, and so do you.<sup>21</sup>

Here, Sprat recognizes the creativeness of poetry. It is true that he did not identify creativeness with imagination. But all the same, in his scheme of

<sup>19</sup> Quoted from *Chambers' Cyclopaedia of English Literature*, Vol. I, p. 755.

<sup>20</sup> Jeans, *The Universe Around Us*, pp. 5 and 6.

<sup>21</sup> Sprat, *Poems*, p. 326.

things, there was a place for poetry, so long as the poetic imagination was confirmed by reason. If Bacon had been accepted, there would have been no place left for poetry. But with imagination controlled by reason, there was the possibility of the poetry of the type produced by Dryden, Pope and others. Hence we can trace the influence of Sprat's *History of the Royal Society* on the poetry of the late seventeenth and early eighteenth centuries. It is not the claim of this paper that the Royal Society and Sprat's *History* were solely responsible for preparing the way for Dryden, Pope and other neo-classical poets. All that the present writer wishes to stress is that the Royal Society was one of the factors which brought about the neo-classical age in English Literature.

The relationship between natural knowledge and religion is the next question that has to be discussed. The method of experimental investigation became the guiding principle of the Royal Society. Scholastic Philosophy had thus received a knock-out blow. The overthrow of authority in one field, very often, prepares the way for a general non-recognition of authority in any field. Therefore there were many who were apprehensive of this new learning. They thought that religion was in danger. Henry Stubbe, in three pamphlets published in 1670, attacked the Royal Society on the ground that it was harmful to the established religion, and the Church of England. Outbursts of this type are indicative of the suspicion with which many looked upon the Royal Society. Sprat was fully aware of this, and so he devotes several pages of his *History* to a consideration of the relation between the pursuit of natural knowledge and religion. First of all, he wants to show that experiments are not dangerous to the Christian religion. Christianity is concerned about showing to mankind an infallible way of attaining salvation. It has offered to us the merits of a glorious Saviour. "By him and his apostles' ministry, it has given us sufficient examples and doctrines to acquaint us with *Divine* things, and carry us to heaven. In every one of these, the experiments of *Natural things* do neither darken our eyes, nor deceive our minds, nor deprave our hearts."<sup>22</sup> Here, Sprat is taking the typical Baconian position of instituting a clear-cut division between divine things, on the one hand, and natural things, on the other. According to Bacon, divine things are based on revelation on the part of God, and faith on the part of man. Therefore Reason must not attempt to prove the mysteries of faith. But when the principles of faith are admitted, reason may deduce from them inferences for conduct. If this is granted, then it follows that experimenting with natural things cannot in any way affect our faith in divine things.

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<sup>22</sup> Sprat, *History of the Royal Society*, p. 347.

Sprat then goes on to say that the pursuit of natural knowledge will give us a greater insight into the mysteries of this earth, and thus enable us to praise God all the more. The praise of one, "who has well studied what he commends", is worth much more than 'the blind applauses of the ignorant'. He asserts that experimental philosophy is not prejudicial to the doctrine of the gospels. We believe in the message of the gospel because Christ's appearance has been strengthened by undeniable signs of almighty power. "And these miracles, with which he asserted the truths that he taught, I would even venture to call divine experiments of his Godhead."<sup>23</sup> So he says, that to understand what is supernatural, it is a good step first to know what is according to Nature. Then again, experimental investigations will not be detrimental to the doctrine of the primitive Church. The significant parts of this doctrine are the spiritual and supernatural aspects of it. They are beyond the reach of any philosophy, and as such unaffected by the study of Nature. This is the typical Baconian position.

But there is one essential point of contrast between Sprat and Bacon. Francis Bacon was primarily concerned with the study of Nature. He advocated segregation of Science from Religion because he did not want Science to be affected by Religion. By his philosophy of segregation he wanted to avoid the odium of directly attacking the doctrines of the Church. Thomas Sprat, on the other hand, was a Bishop of the Anglican Church. He was interested in the pursuit of Science, but he was equally interested in preserving the importance of his Church. He asserts that experimental philosophy cannot interfere with the practice of religion, as far as his Church is concerned. The authentic miracles and prophecies of the primitive Church are beyond the province of the scientist. He attributes them to God's infinite wisdom and power. But Sprat goes on to say that the scientist does apply critical scrutiny to modern pretences to supernatural guidance, and often destroys them by explaining many apparent miracles by the application of natural laws. Here, we have already got the seeds of scepticism. If the scientist can apply his critical scrutiny to modern pretences to supernatural interference, then why should he not apply the same critical investigation to the claim to supernatural guidance which are made on behalf of the Fathers of the primitive Church? As a matter of fact, that is exactly what has happened throughout the following three centuries of scientific investigation.

Sprat goes further; and says that the inquiring spirit of modern science was first produced by that liberty of judging and reasoning which brought

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<sup>23</sup> Sprat, *Op.*, cit. 351.

about the Reformation. Thus, both the Church of England and the Royal Society sprang from the same spirit of intellectual independence. Reason is one of the corner-stones of the Church of England; and so the study of Science cannot affect it. But it will affect the doctrines of the Roman Catholic Church, which are based on 'implicit faith' and the Puritan doctrines, which are based on 'enthusiasm'.

This was a very significant line of approach, and it had far-reaching consequences on literature, life and thought. The Royal Society, through its mouth-piece, Sprat, maintained that there is no conflict between Natural knowledge and Religion. Or in other words, that the truth arrived at as a result of scientific investigation is compatible with religious truth.

In the earlier stages of the study of science, this attitude was a great help to the cause of Science. Otherwise Science would have been in danger; for in the seventeenth century, Religion was a powerful factor, and if Science had appeared as an enemy of Religion, it would never have been allowed to raise its head. That was why Bacon wanted to protect Science from Religion. His theory of 'segregation' was calculated to shield Science from Religion, rather than to save Religion from the assaults of Science. The Middle Ages looked upon the investigation of Nature as equivalent to the pursuit of the Black Art of magic. The Faustus Legend testifies to the dread with which the Middle Ages looked upon the study of Natural Science; and in fact, this tendency continued through the Renaissance. So it was that Christopher Marlowe selected the Faustus episode as the theme of his great tragedy. Hooker too, in his *Ecclesiastical Polity*, looked upon earth, water, air and fire as the allotted spheres of evil spirits. "For being dispersed, some in the air, some on the earth, some in the water, some among the minerals, dens, and caves that are under the earth; they have by all means laboured to effect a universal rebellion against the laws, and as far as in them lieth utter destruction of the works of God."<sup>24</sup> The mediæval conception of Natural Science as 'forbidden knowledge' was still persisting when Bacon published *The Advancement of Learning*; and Marlowe's *Faustus* appeared in 1588, not long before Bacon's *Advancement* (1605). That was why, at the very outset of his book, Bacon took up this question for discussion. "Bacon's task was to prove that Natural Science was Promethean and not Mephistophelean."<sup>25</sup>

This attitude of Bacon was accepted by the Royal Society, which had, among its members, many devout ministers of the Christian Church; and

<sup>24</sup> Hooker, *Ecclesiastical Polity*, Bk. 1, Sec. 4.

<sup>25</sup> Willey, *Seventeenth Century Background*, p. 33.

this put the pursuit of Natural knowledge on a secure basis. Now it has to be borne in mind that most of the divines associated with the Royal Society were ministers of the Church of England; and also that the seventeenth century was an age of religious controversy, when Intolerance and Fanaticism were still rampant. The Restoration of 1660 was a triumph for the Anglican Church. Therefore the Anglican element, dominating the Royal Society, proclaimed that the pursuit of Natural knowledge could have no adverse effect on the Church of England, which was itself built on reason. As has already been pointed out, they went further, and said that the pursuit of Science would affect the Roman Catholic Church, based on 'implicit faith', and the Puritan doctrines, based on 'enthusiasm'.

Here, we have the seeds of a more radical scepticism. Locke's position, in his *Essay Concerning Human Understanding* (1690), in which he declined to admit any knowledge that is not based upon 'experience' either of the external objects of sense-perception, or of the operations of the mind, is but the natural outcome of Sprat's contention that the scientist is justified in applying critical scrutiny to modern pretences to supernatural guidance. It is beyond the scope of this paper to trace the growth of this scepticism through Hume, Voltaire and Rousseau up to our own times. What the present writer intends to emphasize is that in the very process of trying to bring about a reconciliation between Natural knowledge and Religion, Sprat had already sown the seeds of scepticism.

A third question that deserves to be considered in this connection is that of the relative merits of the ancients and moderns. The seventeenth century saw a literary war waged on this issue. "It was part of the rebellion against the intellectual yoke of the Renaissance."<sup>26</sup> Intellectual life had long been based upon the authority of books and abstract theories, and not upon the facts of experience. Gradually, people began to challenge this authority of the ancients. The fundamental question was whether the men of to-day could contend on equal terms with the illustrious ancients. This implied the larger issue as to whether Nature had exhausted her powers. The champions of the moderns asserted the permanence of the powers of Nature, while their opponents advocated the theory of degeneration. In England, we get the first mention of this topic in 1580. In that year, an obscure divine, named Francis Shakelton, published a treatise entitled *A Blazing Star*. "Holding to the Biblical prediction of the destruction of the world by fire, he joins with it a belief in the old age of the universe and its attendant

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<sup>26</sup> Bury, *Idea of Progress*, p. 78.



debility.”<sup>27</sup> The other side of the case was put forward by another divine, named George Hakewell, who published in 1627 a folio entitled, *An apology or declaration of the power and Providence of God in the Government of the World, consisting in an examination and censure of the common error touching Nature’s perpetual and universal decay.*

It is not the purpose of the present writer to trace in detail the different phases of this controversy. R. F. Jones, in his *Ancients and Moderns*, attributes this long-drawn-out battle of the books to the growth of the new attitude to experimental science. According to him, “the quarrel out of which Swift’s satire sprang had its roots in the conflict between the new science and the old learning and not in France.”<sup>28</sup> If we accept this contention of Jones, then it follows that Sprat’s *History of the Royal Society* is an important landmark in the history of this controversy. Mention has already been made of the fact that Sprat’s *History* was the official pronouncement of the Royal Society, and that it put forward the case for the experimental scientist in a comprehensive and unequivocal manner. By 1667, ‘experimental Philosophy’ had established itself against the claims of scholasticism. The climax of propaganda for the new science was reached in Thomas Sprat’s *History of the Royal Society*. It revealed to the world the secure position in which the Baconians were entrenched. The fact that it was the well-considered view of the whole body of Baconians makes the *History of the Royal Society* the most important document in support of experimental philosophy, and therefore of the moderns, in all the propagandist literature of the seventeenth century.

What is the significance of this, as far as literature is concerned? The publication of Sprat’s *History of the Royal Society* meant the final triumph of the cause of the moderns. This triumph had certain far-reaching consequences. We have already seen that the whole controversy regarding the relative merits of the ancients and moderns revolved round two questions. In the first place, can the men of to-day contend on equal terms with the illustrious ancients? Secondly, has Nature exhausted her powers? The publication of Sprat’s *History* gave the final answer to these two questions. The men of to-day can contend on equal terms with the illustrious ancients. Nature is not decaying, nor has she exhausted her powers. This gave the next generation of literary men a forward look. Both the Middle Ages and the Renaissance looked back into the past, the one to the writings of the early Christian Fathers, and the other to the literature of ancient Greece

<sup>27</sup> Jones, *Ancients and Moderns*, p. 24.

<sup>28</sup> *The Year’s Work in English Studies*, 1936, Vol. XVII, p. 233.

and Rome. The Restoration saw a breaking away from this tendency. True, there had been an Augustan age in the past; but it is possible to have another Augustan age in the present or in the near future. How did this changed attitude affect the literature of this age? To answer this question, we have to go further into the points of resemblance between the Middle ages and the Renaissance, and see what the attitude of the Restoration was towards those questions about which there was agreement between the Middle Ages and the Renaissance.

It is well known that as we pass on to the Renaissance from the Middle Ages, we notice, in several respects, a break-away from the old tradition. But perhaps it is not equally well recognized that in certain other matters, the Renaissance is a continuation of the earlier tendency. In fact, one is justified in saying that certain distinctly mediæval conceptions were even intensified by some of the characteristic movements and ideas of the Renaissance. For example, one of the notable teachings of the Middle ages was the doctrine of the limitations of man. The Middle ages loved to dwell on the smallness of man's knowledge, and the slightness of his capacity to increase the same. With the advent of the Renaissance, and the accumulation of new knowledge, scholars began to despair of the possibility of effecting a synthesis. So they became rather sceptical about the possible attainments of human knowledge. Much of what they had laboriously learnt had been proved to be false, and they feared that in a short time, the new discoveries also would be superseded. Thus the characteristic mediæval conception of the insignificance of human knowledge was intensified by the Renaissance. Thus the Middle ages and the Renaissance agreed that the present is inferior to the past, and also that the individual is insignificant.

The triumph of the moderns meant a break-away from this attitude. The present began to assume great importance, and so also the individual. Moreover the scientists looked upon the individual as a link in a powerful chain. As Sprat says, "Though Art is long, and Life is short, yet many lives of studious and industrious men in one Age, and the succession of many lives of such men in all future Ages, will undoubtedly prove as long as Art itself."<sup>20</sup>

If the present has significance, then current events deserve a place in literature. Again if the modern individual is important, then he can be the subject-matter for literary works. That was exactly what happened. To establish this, let us look at the chief types of modern English prose which have their roots in this period. Pepys' *Diary* and Evelyn's *Memoirs* both

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<sup>20</sup> Sprat, *History of the Royal Society*, pp. 333-34.

belong to this age. Here we have the beginnings of Autobiography in English literature. In this connection, it may also be noted that Clarendon, who belongs to the same period, had written much of his own biography into his *History of the Rebellion and Civil Wars in England*. Autobiography, as a literary form, can flourish only in an atmosphere where the importance of the individual is recognized. The same recognition of the worth of the individual leads to the writing of biographies and character studies of contemporary figures. The first literary biography in English, Sprat's *Life of Cowley*, appeared during this period. Sprat is conscious of the fact that he is breaking new ground, and he says that he is definitely turning away from 'the pompous histories of great men' to lives of men in the humbler walks of life. Again, Aubrey's *Brief Lives* and the biographies called *The Lives of the Norths* also belong to this period. The personal essay or causerie came into being during this age, the pioneers in this field being Abraham Cowley and Sir William Temple. Cowley's essay, 'Of Myself', was a typical product of the age when the individual had assumed a new significance. Again, the recognition of the importance of the present comes up in the fact that it was this period that gave birth to Histories of contemporary events. Burnet's *History of My Own Times* bears testimony to the fact that he regarded his own times as important. In fact, one is justified in saying that English writers in this period seem suddenly to have acquired the power of observing their contemporaries (and in some cases themselves), and of recording their observations; just as scientists observed and experimented upon natural phenomena. Certainly, the Royal Society played an important part in bringing about this changed attitude. Attention has already been drawn to the fact that the findings of the Royal Society were made known to the world by Sprat's *History*. This proves that Sprat's *History of the Royal Society* has great significance in the field of English literature.

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## A NOTE ON SWIFT

BY BOMAN H. MEHTA, M.A. (CANTAB.)

THE two distinguished members of the Scriblerus Club, Swift and Pope, were not unanimous in opinion regarding the pattern of the universe and the part played by man in the scheme of things. Both were agreed that the proper study of mankind was man, but their inferences were poles apart. Pope was rhapsodical in his estimate, Swift was explosive in his indictment. Pope in his *Essay on Man* betrayed the shallow optimism of a Victorian:—

“Go, wondrous creature, mount where Science guides  
Go, measure earth, weigh air and state the tides :  
Instruct the planets in what orbs to run,  
Correct old tides and regulate the sun. . . .”

This confidence was not shared by the King of Brobdingnag, for whom mankind is ‘the most pernicious race of little odious vermin that Nature ever suffered to crawl upon the surface of the Earth’.

The English race in its turn reacted with an irony which surpassed the irony of these great writers. Pope’s epigrams found their place in the autograph books of school-girls and Swift’s revelations were expurgated till *Gulliver’s Travels* became a book of clean fun for the nursery. Such a ruse on the part of the English is typical. When a state of affairs is not flattering to their self-esteem, when the absurdity of their respected conventions is exposed, when their political malpractices are unearthed, they will not cry ‘wolf’ but dismiss the denunciations as pathological in essence. A failure in politics is kicked out with a peerage and a bungler in the battlefield fizzles out with a field-marshalship. Such an attitude is not without its positives, for in moments of stress and storm it also produces a Churchill instead of a Petain. To shift back to Swift, his writings in the popular mind are classed with tales of the Crusoe type which hold children from play and old men from the chimney-corner. The essential passages are either exorcized, or exhibited only to prove Swift’s misanthropy and the chaotic condition of his mind. Any examination of his work in terms of ‘misanthropy’, ‘hatred’ or psychological frustration cannot be acceptable.

No spirit of defeatism hangs about his work; he stood up to the enemy to the last hours of his sanity, against the seductions of mysticism as well as against the threats of the government in his day-to-day struggles for the Irish. Therefore the remarks of an intellectual, viz., Aldous Huxley, on

Swift are not irrelevant for our purpose. "Swift's greatness lies in the intensity . . . which is the essence of his misanthropy and which underlies the whole work. As a doctrine, a philosophy of life, this misanthropy is profoundly silly. Like Shelley's apocalyptic philanthropy, it is a protest against reality, childish (for it is only the child who refuses to accept the order of things) like all such protests, from the fairy story to the Socialists' Utopia." This is representative of the confusion which exists in the approach to Swift. Huxley tries to deduce a philosophy of life from Swift's works; next he compares the intensity of feelings which pervade his works with that of Shelley's, who, as Mr. Eliot points out, hardly outgrew his adolescent period; and lastly, he identifies the 'childish protest' to the protest of the Socialists' Utopia thus betraying a fundamental incomprehension which at best can be described as infantile innocence.

It is impossible to study Swift today in a state of vacuum. He was not a revolutionary in any sense: on the other hand, he often shared the shallowest complacencies of the Augustan common-sense. But he was alive to the conditions of the rising tide of the bourgeoisie, and the evils which would result from that order. He had not the conviction to advocate a step back to feudal way of life, nor had he a revolutionary's vision to accept the new order as an inevitable historical process. Consequently the *status quo* was for him unacceptable. Therefore in the vivid simplicity of his story-framework he brought precise and documented charges against the ruling class of his time. He clearly saw the form which was emerging from the exploitation by the ruling class of his day. Gulliver was at great pains in explaining to his master Houyhnhnm that in England "the rich man enjoyed the fruit of the poor man's labour and the latter were a thousandfold in proportion to the former. That the bulk of our people was forced to live miserably, by labouring every day for small wages to make a few live plentifully."

The methods of acquiring colonies were observed by Swift in all their original simplicity: "For instance, a crew of pirates are driven by a storm, they know not whither; at last a boy discovers land from the topmast; they see a harmless people, are entertained with kindness, they give the country a new name, they take a formal possession of it for the king, they set up a rotten plank or a stone for a memorial, they murder two or three dozen of the natives, bring away a couple more by force for a sample, return home, and get their pardon. Here commences a new Dominion acquired with a title of Divine Right". Treat this theme poetically and the pirate becomes Prospero, the native a barbaric Caliban and Ariel a convenient Quisling. And you have tempest. If one is familiar with the nature of law and order

and justice in Hitler's roofless Fortress, where to express an opinion is to run the risk of treason and sedition, one cannot help admiring the perfect clarity with which Swift understood the character of trials for sedition: "In the trials of persons accused for crimes against the State, the method is much more commendable (than in civil cases): the Judge first sends to sound the disposition of those in Power; after which he can easily hang or save the criminal, strictly preserving all forms of law."

The fearless sincerity with which Swift espoused the Irish cause should dispose off all attempts at explaining away his writings as a product of misanthropy. The Drapier Letters are perhaps the finest specimens of agitational pamphleteering in the English language. The controversy regarding Wood's half-pence provided Swift with an admirable opportunity in rousing the Irish from a sense of frustration to one of unification. In a simple matter-of-fact tone he catalogued how the country was drained of its wealth. It would be difficult to point to a parallel of the kind of political jobbery which was rampant at the time: "This among many others, is a circumstance whereby the kingdom of Ireland is distinguished from all nations upon earth; and makes it so difficult an affair to get into civil employ, that Mr. Addison was forced to purchase an old obscure place, called Keeper of the Records in Bermingham's Tower, of Ten Pounds a year, and to get a salary annexed of £ 400 to it, though all the records there are not worth half a Crown, either for Curiosity or Use." Moreover by systematic economic pressure the country was being mulcted not only by absentee landlords but also by absentee servants of the Crown: "We know very well, that the Lords Lieutenants for several years past, have not thought this kingdom worthy of the honour of their residence, longer than was absolutely necessary for the king's business: which consequently wanted no speed in the dispatch. And therefore, it naturally fell into most Men's Thoughts, that a new governor coming at an unusual time, must portend some unusual business to be done." The result was that starvation stalked the land. Whatever administration there was, was for the purpose of profit. And when revenue from Ireland was the only consideration, Swift seized the opportunity of exposing the logical outcome of such an attitude. His suggestion, called a "Modest Proposal", was that Irish children, far from being a burden to their parents, could be a source of profitable investment if only they were served up as meat for the tables of the rich. The impulsion behind such a grotesquely ironical suggestion was not Swift's congenital or acquired sadism but the obvious desire to point out the irresponsible and callous disregard of an alien administration for the people of Ireland. If proof were required to indicate the motif, he maintained that his proposal

would not in any way cripple English commerce and therefore if adopted, "we can incur no danger of disobliging England. For this kind of commodity will not bear exploitation the flesh being of too tender a consistence to admit a long continuance in Salt, although perhaps I could name a Country which would be glad to eat up our whole Nation without it." This is the language of a shopkeeper, and Swift's adoption of it was a deliberate attempt to bring into relief the values of the market-place which conditioned the subjection of a country.

Such an indictment would normally demand positive values from its author. It would not be presumptuous to assume in him an outlook which is either humanitarian and therefore sentimental or scientific and progressive. Unfortunately with Swift it was neither. The essence of all his writings is negation. And this negation cannot be explained away on misanthropical or pathological grounds. It is analogous to the 'gloomy' speculations, in contemporary times, of Dean Inge, minus his Platonic allegiance. The 'misanthropy' of Swift, the 'pessimism' of Inge are expressions of an astute mind, which by class instinct and upbringing belong to an outmoded order which is dissolved by the ineluctable process of history. Inge tried to arrest this process by an appeal to atavism; Swift, though not so explicitly, by a reference to standards, the merit of which lies in their empty sound: "He confined the knowledge of governing within very narrow bounds; to commonsense and reason, to justice and lenity, to the speedy determination of civil and criminal causes."

No one was more conscious than Swift of the growth of national wars—"sometimes the quarrel between two princes is to decide which of them shall dispossess a third of his dominions"—of the seizure of colonies—"if a prince sends forces into a nation where the people are poor and ignorant, he may lawfully put half of them to death, and make slaves of the rest, in order to civilize and reduce them from their barbarous way of living",—of the enslavement of the people to the National Debt, of the rise of stockjobbing, of the increasing degradation of women and a parasitism of all kinds. He was aware that these horrors were the result of the increasing acquisition of power by the middle class and therefore he directed his satire against it. But he was in no sense a revolutionary; actually he represented a class which was soon to be replaced. And what he really dreaded was disorder. "If," he said, "I should insist upon liberty of conscience, forms, conventicles of republicans and print books preferring that government and condemning what is established, the magistrate would with great justice hang me and my disciples." He preferred the certain magistrate to the uncertain mob. He regarded the popular rights as a mode of usurpation and the



threat of revolution as a threat of mutiny. Herein we find the essential contradiction in Swift. His powers are directed in a boomerang fashion and the effect is always negation. And this is reflected in his methods of approach and of reproach. It is difficult to discuss his criticisms of vice, folly or other aberrations with reference to any kind of positive standards.

This absence of positives is most explicit in "An Argument Against Abolishing Christianity." "I hope," he says, "no reader imagines me so weak as to stand up in the defence of real Christianity. . . . To offer at the restoring of that would indeed be a wild project. It would be to dig up foundations; to destroy at one blow all the wit, and half the learning of the kingdom; to break the entire frame and constitution of things, to ruin trade, extinguish arts and sciences, with the professors of them, in short to turn our courts, exchanges and shops into deserts; and would be fully as absurd as the proposal of Horace, where he advises the Romans, all in a body, to leave their city and seek a new seat in some remote part of the world, by way of corruptions of their manners." The assumption here is not so much the acceptance of Christianity as to bring into relief the fundamentally unchristian principles, motives and attitudes of his reader. To illustrate this approach further, this is what Swift says in another context: "He is a Presbyterian in politics, and an atheist in religion, but he chooses at present to whore with a Papist." What is left now? The positives have completely disappeared and the result is negative. Similarly the standards of the Houyhnhnms,—Reason, Truth and Nature—"they thought Nature and reason were sufficient guides for a reasonable animal"—as shown by Gulliver, are essentially negative. The problem for the Houyhnhnms is not so complicated as for the Yahoos. Whereas the Yahoos have to face life, emotions and instincts, the Houyhnhnms enjoy all freedom from irrational feelings and instincts. The 'dictates of reason' simplify their existence. In other words their positives can have free play only in a void. Here we have the paradox in Swift's genius; it is the paradox of the declassed individual, of one who is critical of the present but has not the courage to look into the future, because allegiance to hereditary rights and privileges are too strong to permit any break. If Swift was alive today he would have been as critical of the Soviet Union as he was of the emancipated middle class of his own day.

## RUINS OF RAM-NAGAR

BY G. V. BHAVE, M.A. (BETUL)

THE name Ram-Nagar carries us back to the 17th century A.D.; particularly from its second to its fourth quarter. These fifty years and more, mark the fourth, and for all practical purposes, the last stage in the history of the Gadha Mandala dynasty, provided we divide the whole of their ruling period into as many stages as there were capitals, the other three preceding Ram-Nagar having been Gadha, Singhorgadh and Chouragadh, situated respectively in Jubbulpore, Damoh and Narsingpur Districts. Like many capitals of old forgotten Empires, such as Vidisha and Vijaya Nagar, Ram-Nagar is to-day lying in complete ruins, which to the casual visitor, historically given or otherwise, have their own tale to tell and there is eloquence in their silence. Each stone that we observe, each brick that we touch, or even each old tree that we eye, has writ large upon it, mixed feelings of joy and sorrow, spirit of bravery and cowardice, ideas of national unity and family intrigues, everything there presenting such a living picture of what Ram-Nagar can have been and was some three hundred years ago. The capital of a big empire once, but reduced to a small village now, Ram-Nagar is hardly remembered by any body, except in connection with the Gond Rule. Anyway, it is worthwhile to attempt to look into the past history of the place and my four years' stay at Mandla, has given me ample opportunity to visit the place personally and observe things at first hand.

### *How the Town Came into Being?*

Unlike many other towns in India, which have grown in the past, as a sacred place of pilgrimage or as a trade centre or simply as a mere pleasure resort, Ram-Nagar was created exclusively for giving safety and protection to Gond dominion against the many enemies which were watching their opportunities to pounce upon it like the leopard pouncing upon its prey. Prem Shah, traditionally, the 53rd King of the Gadha Mandla dynasty, was murdered by Jujar Sinha Bundela of Orchha at Choragarh in 1630 A.D., when his son Hriday Shah was at Delhi. Quite young in age, the Prince obtained the permission of the then Moghul Emperor and returned back to his capital, where he had a hot reception at the hands of the Bundelas; or as some hold it, under fear of forcible conversion by Jehangir, he ran from Delhi accompanied by Kamdeo Bajpai. Without losing a minute's time, he sought the help of Bukhta Buland of Seoni, as also the ruler of

Bhopal, and with their solid succour and aid he completely routed the Bundelas to the extent of expelling them out of the territory. Though safe temporarily to occupy the paternal throne, Hriday Shah saw danger and nothing but danger in continuing his capital at Choragadh, which was open to attacks from all sides. Being thoroughly conversant with every nook and corner of his territory, he selected the proverbially dense forests of the Mandla Division and ultimately put his choice on the site of Ram-Nagar, where he then transferred his capital, the idea having always been that the safety of the capital ensures the safety of a Kingdom. But he forgot the mysterious ways of Destiny, which not unfrequently displays a paradox that, "in safety lies the danger and in danger lies safety". Because, what according to him was an unapproachable, inaccessible and invulnerable locality, surrounded as it was by long running ranges of the lofty branches of the Satpura, thickly covered over by dense and tall growth and infested and haunted by wild beasts, could not save the Empire from destruction. Anyway, the site selected was, and even now, is one of the most beautiful, and testifies brilliantly, among other things, to the artistic taste, that formed a part of Hriday Shah's mind.

The exact year when the settlement of Ram-Nagar began may be under dispute, but the particular person who established the town was, without doubt, Hriday Shah. The *Mandla District Gazetteer*, the *Archæological Survey*, Vol. XVII, and the *Imperial Gazetteer* supported by the *C.P. Gazetteer*, published in 1867, have all put it down unequivocally that Hriday Shah founded the town. All these authorities have based their accounts on Native Chroniclers, one of which records I have personally read and the authenticity of which I have no reason to doubt. And the now available Sanskrit records also run to our support. For example, *Gajendra Moksha*, an unpublished Sanskrit poem, has in its 9th Sarga, that—

तत्पुत्रो भूमदेन्द्रो हृदयनरपतिः सर्वविद्याप्रवीणान्  
 वीणावाद्याद्यहीनान्विबुधविवराजन्दयन्स्त्रीयबुध्या ।  
 तुल्यं देवेन्द्रपुर्या नगरमभिधया रामपूर्वं नवीनं  
 यश्चक्रे दर्शि यत्र द्विजविहितमख्यैर्न धर्मश्चतुष्पात् ॥

Now this record of an able poet, going by the name of Laxmi Prasad, was composed in Samvat 1815, corresponding to 1758 A.D. and is sufficiently old to deserve an honourable place in the historical sphere. Similarly, we read in the now published\* *Gadhesh Nrip Varnanam*, a poem composed nearly half a century later, as follows:—

\* Nagpur University Journal, No. 6,

तत्तन्जह्मदयेशमहीपो रामपूर्वनगरे स्थितिमाप ।

यस्सभा विबुधराज समासीत् पंडितैश्चपरिमंडितमध्या ॥

Our position becomes the more strengthened by Ram-Nagar Inscription which is a Sanskrit record by a poet contemporary to Hriday Shah, wherein there is a great indirect hint that the King settled, lived and ruled at Ram-Nagar. The question of the founder of the town being thus settled, the time about the growth of the town is not any intricate problem. Nearly every historian of repute has tried to fix the date as 1633 A.D. Now, the above-mentioned Ram-Nagar Inscription composed at the instance of Hridaya Shah bears Samvat 1724 as the date of its composition, which corresponds to 1667 A.D. Hridaya Shah had a long reigning period of about 50 to 70 years, if we hold to the lowest extremity, and the Inscription being in dedication to a temple, must have appeared after the town had developed into a full-fledged Capital furnished with all the amenities of civic life. Therefore, one cannot be far wrong in stating that Ram-Nagar was founded between 1730 and 1740 A.D.

Situated at a distance of ten miles east of Mandla and on the southern banks of the river Nerbudda, which makes a deep bend there, Ram-Nagar is approachable both by road and water communications. The whole of its southern boundary is formed by the Jagmandal range of the Satpuras. The town thus having enjoyed the protection by natural barriers on the North as well as on the South, the Eastern and Western sides, therefore, must have been strongly guarded by the military, which was according to the native chroniclers, 15,000 cavalry and 15,000 infantry. The town was possibly more long than broad, and a walk round the present village makes one imagine and nearly conclude that the old town, in its days of full prosperity, was a roughly crescent-shaped habitation. The present area of the town is nearly a thousand acres, but the five villages including Madhupuri and Nakaval, surrounding the present Ram-Nagar, were according to oral traditions of villagers included in the area of old times. Madhupuri, at about 3 miles, forming its Western extremity. In his wanderings of more than two hours, a visitor meets with nothing, but ruins and ruins and ruins whether in the East, in the West or in the South; more in the East than in the West, ruins of old and lofty mansions, impressive temples and houses, wells and Baolis, gardens and recreation grounds. Everywhere, one notices bricks, broken or in complete form, scattered in the open or under some dilapidating walls. Tall karanj trees with monkeys hopping upon them, are seen growing out of terraces of many a magnificent construction, where once lived high State officials and nobility. The town must have been very extensive, spreading over an area of 4 to 5 thousand acres, and on a smallest

estimate, must have comprised from 2 to 3 lacs of inhabitants. The town must have been divided into various localities, many of them being separated from each other by means of natural streamlets, bridged over, regularly flowing, and all joining the river Nerbudda. This must have, along with many gardens, helped a great deal in keeping a proper level of sanitation in the town. Almost the whole locality must have been on an even and level ground. What are fields of cultivation to-day do, at times, throw up, during tilling occasions, silver bracelets and other ornaments, as also bunches of long locks of the hair of women, not unoften copper coins and all kinds of domestic earthen utensils. A belief is also current in the District that enormous wealth in the form of gold lies hidden in fields at Ram-Nagar.

As the capital of Gond Government, Ram-Nagar must have been an important and busy place for Statesmen, generals and administrators living there for the purpose of finding out further means of protection of the kingdom, and for Pandits and scholars to carry on their studies. Stanza after stanza, in the available Sanskrit records, is, as it were, rushing forward to give a vivid picture of the prosperity and glory which prevailed in the then town, all centring on Hriday Shah and touching such sides of his activities as building of magnificent mansions, constructing of wells and serais, erecting temples, performing various sacrifices, cultivating such fine arts as music, painting, etc., encouraging discussion among learned Brahmins, making public charities and even maintaining good gardens. All this development could be possible only because Hriday Shah enjoyed comparative freedom from warfare, getting time and tranquillity of mind to carry on peace-time pursuits, which ever required patience. The proverb "Rome was not built in a day" holds equally good in the case of Ram-Nagar, and if nothing had gone wrong after the death of Hriday Shah, the day of destruction and ruin would not have dawned on Ram-Nagar. For after this King, came his son Chhattra Shah to the throne, who in his turn was succeeded by Keshari Shah. These two were plotting and being plotted against, and after Keshari Shah's murder in 1680 (?) A.D. his son, Narendra Shah, had to transfer the capital to Mandla, whose foundation had already been laid by Hriday Shah. Ram-Nagar was, therefore, the seat of Government of only three kings, as against the versions of European writers, who hold eight kings having ruled there, which is disproved by facts. All this rise and fall of Ram-Nagar was as rapid and fleeting as the scenes in a drama, and the result was that the place could not diffuse and dilute the fruits of civilisation which it had absorbed in 50 years. Within only a century and a quarter from the change of the capital to Mandla, Ram-

Nagar seems not only to have lost its former importance, but also to have undergone a total transformation, so as to be regarded as no more than a village in 1818 A.D. when it came under British possession. How did all this come about? Local traditions have it that the town was completely burnt towards the end of the 18th century by an unknown agency, and to this may be added the possibility that the whole locality must have been swept by torrential downpours of rain and also by high floods to which the Nerbudda is always subject. Elsewise, it is difficult to reconcile the present dreary appearance of the village and its surroundings with the existence of a vastly extending capital of hardly three hundred years back. Excavations at places may also reveal remains of old buildings.

Out of such a large town, the buildings of those times, which are in existence to-day, are the Moti Mahal Palace, the Temple, the Bhagwat Mahal, the Rani Mahal and the palaces of Hridaya Shah's Commanders, Dal and Badal, the last named being totally out of order.

The Moti Mahal is a massive construction, rather thickset and showing no art, and in the words of Russel, "it shows no ornament and no grace, but it enjoys one of the finest views of Nerbudda", and Captain Ward says, "A more lovely site than that of the palace of Ram-Nagar can hardly be imagined and looking upon the river, there is a long wide reach of water with high steep banks, covered to the water's edge with lofty forest trees and dumps of the tall kattang bamboo". And authors of the *C.P. Gazetteer* also aver thus: "... from where the present palace stands the most enchanting view of both branches of the river is obtained". It is more a fortress bereft of towers than a palace, but it is all the same, one of the grandest buildings in the region. It has four storeys in the front and three on the rest of the three sides. Standing immediately on the river bank, it is 80 feet above the river. The length and breadth is each nearly 200 feet, and there is a Court inside, which is about 160 feet both sides. In the centre of this Court, there is a receptacle of water, square in shape and measuring nearly 40 feet each way, where there were fountains in old times. It is almost covered up now, but old men of the village are still there who have seen the thing deeper than at present. For keeping the water constantly supplied to the reservoir, there was made a bund in the river just opposite the palace, traces whereof still existing. This and the arrangements for the free play of water back from the reservoir through under the front side of the palace are not without some engineering skill on the part of the builders. The palace is divided into numberless small rooms, nearly hundred, said to have been meant for 100 wives of Hriday Shah. On the right-hand side of the palace, but quite attached to it, there is

the Hatti-khana, where there are spacious and separate arrangements for more than fifty elephants to stay. The rooms of the palace just mentioned, have by their side labyrinthine passages and are all with their doors taken out. One of the rooms on the ground floor and in the east of the Courtyard is walled up and is believed to have an underground passage to Mandla Fort. In the wall in the north of the Courtyard, there is fixed a stone Sanskrit Inscription, giving the long genealogy of the Gond Kings upto Hriday Shah. It is there recently set and it did not originally form part of the palace. Deserving as it does to form an independent subject of discussion, nothing can be further said about it here. The Malguzar does not claim the palace, the Government has disowned it and the Gonds have no legitimate right of possessing it. The District Council, therefore, have their serai there with the key of the palace with the Primary School Master. The building is every way representative of the Gondi construction and deserves to be protected by the Government, both for itself, as also for the valuable Sanskrit Inscription inside it. I have opened correspondence in this connection. There are many legends connected with the Palace, but the fact is undoubted that it was built by Hriday Shah for his favourite consort, Sunderabai.

### *The Temple*

About 100 feet to the south-west of the Palace is a Hindu temple, dedicated to Vishnu, Shiv (Sheo), Durga, Ganesh and Surya. As is clear from the last portion of the Sanskrit Inscription spoken of above, the temple was built by Rani Sundari, who also gifted away rent-free villages for the proper up-keep of the temple. Of the five images, only those of Ganesh, 3 feet high, and Surya, are in tact, to be seen there with the Bull of Sheo lying outside, while the remaining three disappear. The temple is square in construction, measuring about 55 feet inside, and its outward appearance is like a tomb. It is all made of brick and has a corridor inside running round the main portion of the temple. The temple is in possession of the Malguzar, Mr. Tambe, and naturally therefore the Inscription which originally belonged to this Temple, and from which the following is the extract

अभवत्सुन्दरी देवी राज्ञी तस्य महीपतेः ।

सौभाग्यसदनं पुण्या सम्पदेव स्वरूपिणी ॥ ४२ ॥

विष्णोः शंभोर्गणेशस्य दुर्गाया-स्तरणेश्वरा ।

व्यधितस्थापनमिदं विधाय विबुधाकृतम् ॥ ४६ ॥

तत्र नियुक्तैर्विप्रैरुपहारैरुत्सवैर्धनैरमितैः ।

या सुन्दर त्रिविक्रममुक्त्यान् देवान्सदान्वयावके ॥ ४८ ॥

ought to be the property of the said gentleman, but how the two slabs of the record have travelled to the palace, is not known to anybody, not even to Mr. Tambe. The temple is now used as a shelter by the village cattle. It is as old as the Inscription and urgently needs protection by the Government.

### *The Palace of Bhagwat Rao*

On the back side of the Moti Mahal, but very near it, is the palace of Bhagwat Rao, who was the minister of Hriday Shah. The building is three storeyed, is nearly square in form and is a true specimen of the Gondi art. Unlike in the Moti Palace, stone is used here more abundantly than brick, and it covers nearly half of the area covered by the Moti Mahal. The minister, we are told, was a haughty tempered man, and he raised his residence to a height enough to overtop the Moti Mahal Palace, unmindful of all remonstrances from the King who therefore felt injured in his dignity. Hriday Shah consequently ordered the unwanted height of the minister's building to be demolished by cannon-shots discharged from the Moti Mahal. The present sight of the building is nevertheless imposing and for want of protection from Government, is showing signs of decay. Bhagwat was a Kayastha by caste. He was the chief of the three ministers of Hriday Shah, the other two being Kastur Sohani and Purushottam Brahmin, one Gulal being his constant conscience keeper. He died with the King, which is said to have been a sympathetic death. An old record thus says about him:—

मुख्याधिकारी हृदयेशराज्ये भूप्रियो भागवताश्रयः ।

संज्ञार्थ-विसन्तुपतेर्गुलालो मृजाबलेशोऽसकृद्विजोभूत् ॥

### *The Palace of the Baghela Rani*

At about a mile and a half in the east of the Moti Mahal Palace is there to be seen standing a huge building overlooking a Baoli within its premises. This is the only construction in that area, which is protected under 'Ancient Monuments Act', the Public Works Department spending nearly Rs. 50 annually for its repairs. The building has a big hall with huge dimensions, with a terrace and some rooms. The baoli has spacious steps and is very deep, though its water is almost dried up in Summer. The building still retains clear traces of once there having been a flourishing garden. The edifice is told to have been built specially for the Baghela Rani, who possibly was a keep of Hriday Shah. Her name is difficult to obtain, but she must have been very much loved by the King; otherwise, it is difficult to explain how he should have lavished so extravagantly on her. Provisionally her name may be passed to have been either Mrigavati



or Shyama, the two other Queens also mentioned along with Sunder Devi in the Ram-Nagar Inscription. The building is in a tolerably fair condition and can greatly help in setting down conclusions about the Gondi art. The iron hooks still seen fixed in the ceiling of the central hall, should, for example, lead us to know that the Baghela Rani was fond of enjoying the traditional Hindu form of dignified recreation, through means of a wooden swing. This mansion, the reports say, was in the centre of the old Ram-Nagar, which fact, if anything, adds to the theory of the vast size of the town then.

Opposite the Moti Mahal Palace and exactly on the northern bank of the river, there are still signs in the form of scattered bricks of residential quarters, which were the barracks of a class of soldiers called the Baigars, whose duty was to guard the approach to the capital, *via* the river, which itself is broad and deep there. And on the south-west boarder of the old town stands a huge hill called 'Kala Pahad', a collection of masonic and massive stone slabs of all shapes. This is a subject deserving of investigation by scholars. I have already submitted a small note on it to the C.P. Research Society two years ago.

In short, Ram-Nagar, like other old capitals of our Province, such as Tripuri, Gadha, Ratanpur, Chouragadh, Singhorgarh, and others, is long waiting for attention from experts.

## SAYYID BULAQI'S MIRAJ NAMA

BY SYED NAIMUDDIN, M.A., MOULVI FAZIL

MOULVI HASHIMI has mentioned<sup>1</sup> an undeciphered doublet "Miraj Nama" of Urdu, preserved in the Bibliotheque Nationale de Paris, beginning with the lines:—

اول نام اند جو بلوں ابد، ثنا او صفت اس کی کر بے عدد  
شنا اس اپرنت سزاوار ہے کمرہا قدرت میں کرتا ہے  
کیا چاند سورج تارے فلک زمین آسمان حور جن و ملک

We have in our possession a complete copy of this rare work which begins with these lines and accords with what has been said by the scholar. It reveals several points relating to the author and his work. The manuscript comprises 27 folios, written in a clear hand, each page usually containing 15 verses. Some important points may be noted in the following selected lines of the ff. 26b and 27a:—

نبی کے کرم سوں منور ہوا زباں کبول کر یو قصہ میں کہا  
کہا آٹھ سو بیت مسراج میں کہ جوہر جوہر ہنر کے تلج میں  
قصہ میں پڑھوں سب خلق میں عجب کیا چاند شمال ماہ حبیب  
ہزار ایک برس پنجہ مدد سال میں کہ یکشنبہ کے روز خوش حال میں  
سو اس روز میں خلق عالم کیا سو اس کون میں بڑائی دیا  
محمد نبی ہیں نیایں کے رتن دو عالم کو سب اسی کون جتن  
رتن خاص اس سارا کا پاؤں میں کہ دل میں پیہم لاکو بلاؤں میں

<sup>1</sup>Europe men Deccan Makhtootat, p. 622. Maulana Qari Professor Ghulam Mustafa Khan of Amraoti also possesses a copy of this doublet, but its last folios are missing. Springer (p. 604) also mentions three copies of this doublet. Moulvi Hashimi (p. 445) mentions another doublet of the same name, beginning with:—

سزا خدا کون سزاوار ہے ہر اک ذرہ اس کا نمودار ہے

Maulana Ghulam Mustafa Khan informs me that Prof. Muhammad Ajmal of Shantiniketan has got another Miraj Nama beginning with:—

حمد ہے سب موجد افلاک کو اوج بخش صاحب لولاک کو  
پاک ہے وہ خالق جن و ملک نور سے اس کے منور ہے فلک  
پاک ہے وہ قادر رب جلیسن ہے محمد اس کی قدرت کے دلیل

الہی توں دنیا رتن دے مجھے۔ کون کا جستن ناکوں بھی سکے  
 کہ سید بلاقی نے پایا رتن۔ پکڑ جیسو دل سوں رکھا او جتن،  
 اگر کوئی پڑے گا تو اس کوں ثواب نہ کہنے میں آتا ہے اس کا ثواب  
 کہ جس پاس مسراج نامہ لپچے بلا بھوت اس کن سو کیوں آ سکے،  
 الہی دعا یوں تو کرنا قبول۔ زبرکت محمد و آل رسول،  
 محمد ترے چار یار داں تمام۔ وگر خجستن پاک امنے مقام  
 بتی جب کئے اس کرم کی نظر۔ اُمت کوں بدر گاہ رب بشر  
 دظالم کرے اس آپر کچھ ستم۔ زبرکت محمد نبی انستم  
 کہ سید بلاقی نبی کا غلام۔ قصہ میں کہا یوں لطف سوں تمام

In these lines the important points are:—(a) The second and the eleventh verses show that the doublet is entitled "Miraj Nama", relating to the Ascent of the Holy Prophet to Heaven. (b) The second verse further shows that the poem contains 800 verses. (c) From the 3rd and 4th verses it is clear that the author began the work in the month of Rajab (February) and completed on a Sunday in the month of Shawwal (May), A.H. 1105 (A.D. 1694). Unfortunately, the date falling on that Sunday is not known, and I think originally there must have been some line referring to it, but now it is missing. (d) The verses 9 and 16 witness that the author is Sayyid Bulaqi. He is not referred to in any biography known so far. His Deccani language, with all its peculiarities, suggests that he is the same Sayyid Bulaqi who is buried in Ellichpur (Berar) near Jāmi Masjid and who is known to have composed some work (this Miraj Nama ?) in that age. (e) In the 12th and 13th verses the author praises the Holy Prophet, his four Pious Caliphs and his Holy Progeny. This suggests that he was a Sunni by sect, although on folio 17b he writes these lines according to the Shia belief:—

کیسا نہ کیا سو سمجھا الہ کہ صحبت میں اک آ کو خجہ ملا  
 نڈایوں ہوا اے محمد بہیں کہ اس پاک کوں توں بچھا پانہین  
 ترے بات پکڑ یا تھا دنیا منے کہ منگنا تھا حاجت تیرے سکے  
 علی کوں میں غائب کیا پاک کر دیا اس کوں قوت سوا صحابہ کر  
 بچھانے کہ بہت میں تھی انگشتی کہ او پاک خجہ سوہے حیدری

But I think these lines are mere translation of some Persian work which the author had before him for the purpose and which he refers to in the following verses:—

نبی سول مت سب کوں سا پائی رہو صدق سات کلمہ نبی کا کہو  
 کہ معراج نامہ کی سنیں خبر، حکایت جو بولا ہوں میں مختصر  
 کیا قاری کو سود گنتی غزل کہ ہر عام اور خاص مجھیں شکیل

The lines 6-8 and also some others which I have not quoted, contain metaphors of "Ratan" and "Padam" and allude to the story of that name which was popular and well known at that time. If it refers to the Urdu doublet once supposed by Moulvi Shamsullah Qadiri<sup>3</sup> to have belonged to Wali of Vellore, Maulana Ghulam Mustafa Khan's views<sup>4</sup> are further corroborated. The Maulana has rightly said that "Ratan-o-Padam" could not belong to that Wali, because (a) the first of the three lines quoted by Moulvi Shamsullah Qadiri from that doublet is in a metre other than that of the other two lines and it is unimaginable in the case of a distinguished literary craftsman like Wali to have committed such an absurd prosodic mistake; (b) the lines, supposed by Moulvi Qadiri to have contained Wali's pen-name, have the word "wale" (= "but" and not Wali) and (c) that Wali, who had been busy in writing voluminous religious doublets like Raudatush-Shuhada, Raudatul-Uqba and Raudatul-Anwar, could hardly find time to write a love-doublet like "Ratan-o-Padam" which would further involve an unthinkable departure from the religious attitude so far adopted by the poet. We may add another point in his support here. Our doublet which was composed in 1105-1694 refers to that romantic doublet and this means that it (the latter) had been composed *much before* this date and thus cannot belong to Wali of Vellore whose literary career<sup>5</sup> ranged from 1141/1728 to 1162/1749.

Now we come to the contents of our "Miraj Nama". It describes, as mentioned above, the Ascent of the Holy Prophet to Heaven. The head-lines of the different cantos of our doublet are:—

حد و نعت - صفت براق و روانگی - اول آسمان - دوم آسمان - سوم آسمان - چارم آسمان  
 پنجم آسمان - ششم آسمان - ہفتم آسمان - دوزخ - بہشت - قدرت باری تعالیٰ - مقام  
 جبریل - عرش باری تعالیٰ - سزا سنی یہودی کہ معجزہ معراج را دروغ نموده بود - خاتمہ.

<sup>3</sup> *Europe men Deccani Makhtootat*, p. 623. These lines are missing in both the manuscripts before me.

<sup>4</sup> *Urdu-i-Qadim*, p. 101.

<sup>5</sup> *Maarif*, January 1940.

<sup>6</sup> *Ibid.*

The number of verses under different heads are:—55, 88, 21, 14, 22, 75, 22, 21, 22, 40, 38, 24, 17, 112, 188 and 27 respectively; *i.e.*, besides the 27 verses of the end<sup>6</sup> there are only 779 verses instead of 800, as the poet claims. The remaining 21 verses are missing in our MS. but some of them are found in Maulana Ghulam Mustafa Khan's manuscript. As we are not making any collation here it seems needless to mention them. Moreover, they are scattered at different places.

As regards the language of the MS. it is enough to say that it contains all the archaic and uncouth words, phrases and constructions peculiar to Deccani. Other striking variants in the usage of words may be noted here; *e.g.*, the author always<sup>7</sup> uses "Darwan" instead of "Darban":—

کہ پہلے سما کے سودرآن کوں کہا کول بیگی سودر وازہ کوں  
کہ دروان بولا کہ توں کون ہے کہ آیا آدمی رات کیا کام ہے  
دوبے آسمان کے سودرآن کوں کہ کشلح درحال دروازہ توں

The author has rightly used "Barraq" in place of the popular "Buraq":—

کلک چل اب شاہ معراج کوں کہ براق گھوڑا کئے ساز سوں  
گئے تازیانہ سو براق کوں۔ نکل جاوے گھوڑ سمنوات کوں  
ولیکن عرض ہے نبی کے کئے ہزاراں سو براق جنت منے  
قبرے محمد نے اس بات کر سواری کئے وہیں سو براق پر۔

Like other Deccani poets the author has also freely changed words to fit them in rhymes. He sometimes uses incorrect rhymes as well:—

<sup>6</sup> In the end of the MS. the colophon runs as follows:—

تمت تمام شد۔ کار من نظم ام شد۔  
بتاریخ ہجری ۱۱۳۱ جمادی الثانی  
یوم چارشنبہ اتمام یافت  
در عهد سلطنت محمد شاہ بادشاہ  
خلد اللہ ملکہ و سلطنتہ

Here the scribe says that the copy was completed on Wednesday, the 20th of Jamadi II in the reign of Muhammad Shah Badshah (1131/1719–1161/1748), but he has not given the year. In his long reign Wednesday falls on the 20th Jamadi II in 1131, 1139, 1147 and 1155.

<sup>7</sup> I have after consulting Maulana's copy found that such peculiarities rest with the author himself. This explodes the prevalent notion that all errors creep in due to the negligence and ignorance of the scribes.

چلے تھے محمدؐ سو معراج کوں،      کہ جبریت کے آگے برس واد کوں،  
 پڑیا تھا پتھر ایک اس ٹھار میں      آگے واں کی مسجد کے دروازہ میں  
 گیا تھا زمین پر سو سندان تھا      کہا میں ہوں جبریلؑ کچھ کام تھا  
 کہ محبوب حق کا نبیؐ خاص ہے      کہ درواں پولیا دوجا کوں ہے  
 کھڑے تھے فرشتے سہت جو ذکر،      کہ صلوات بولے اسے دیکھ کر

The following lines about the Divine Arsh are characteristic of the poet's language and style:—

نہ نعلین کاڑھو چلو سر بسر۔      چلے آو سیدھے عرش کے ابھر  
 تھے پانوسوں گردنِ سلین کا      بے حریریاں کریں توتیا  
 کہ ساتوں فلک تھر تھرے از قدیم      لگے تجھ قدم سو ہوئے مستقیم  
 کہا حق مشرف سوں دیدار کوں۔      مراراز و اسرار غنی ہے توں  
 کہ تجھ ذات کو میں بزرگی دیا۔      جتا یہ صفت ہے سو تجھ کوں کہا  
 میں عاشق ہوں تیرا سو حق نے کہے      تو مشرق میں راہ وہ محبوب ہے  
 توں محبوب میرا و سب سر کمال      بلایا تجھے میں سو دیکھیں حال  
 کہ تجھ ساتھ میں بات کرتا اچھوٹا      عجائب مری قدرتاں دیکھو توں  
 کتنی بات مخفی توں رکھتا مگر      کہ تجھ بن نہ کوئی سو جانے وگر  
 مگر جانتا توں وگر جان کم      نبوت نسبیاں کی تجھ خستہ  
 حشش ہو کر سی پوشیدہ لگند      کہا غیب بھی میں تجھے سر بسر  
 ذکر فکر کچھ توں سو میرے نبیؐ      اُمت کا گنہ میں سوں بنوں۔ سبھی

This is all that we gather about the author's work and his peculiarities.

## THE ISLAMIC AND GHAZNAWIDE BANNERS

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WE know from the Rabbinical writers that the standards of various Western tribes bore figures devised from the prophecy of Jacob, the ravening wolf for Benjamin, the lion's whelp for Judah and the ship of Zebulon.<sup>1</sup> A sculpture, unearthed at Nineveh, bears a figure drawing a bow and standing on a running bull and another shows two bulls running in opposite directions.<sup>2</sup> Besides these figures, the white horse of Westphalia and the bull's head of the Mecklenburgers are also ancient symbols of heraldry.<sup>3</sup>

In the East we have ancient symbols as the five-clawed dragon of the Chinese Empire and the chrysanthemum of the Emperor of Japan.<sup>4</sup> In the Mahabharata we find different banners of different chieftains. Arjun is said to have had a banner containing the design of a rainbow and another with that of a monkey.<sup>5</sup> His son Abhimanyu had the representation of an elephant embedded with gold,<sup>6</sup> and so Karṇa had, but the field of his banner was white.<sup>7</sup> Bhishma's banner contained the device of a palm tree and five stars,<sup>8</sup> while Krishna had a "garūd" (or Eagle)<sup>9</sup> designed on his pennon.

### *The Islamic Banners*

In the Pre-Islamic Arabia each Bedouin tribe had its own banner which differed in colour from those of other tribes. The banner was tied on to the lance and usually the chieftain himself carried it in the war. About the

<sup>1</sup> *Enc. Brit.*, 11th edn., Vol. XIII, p. 311.

<sup>2</sup> *Ibid.*, Vol. X, p. 454.

<sup>3</sup> *Ibid.*, Vol. XIII, p. 311.

<sup>4</sup> *Ibid.*

<sup>5</sup> *Bh. parva*, ch. 50, verse 34. I am indebted to my esteemed friend Dr. H. C. Seth for these lines.

<sup>6</sup> *Ibid.*, ch. 47, verse 8.

<sup>7</sup> *Karna parva*, ch. 11, verse 7.

<sup>8</sup> *Bh. parva*, ch. 46, verse 50.

<sup>9</sup> *Drona parva*, ch. 80, verse 2. The royal badge of Charlemagne (742-814), the sceptre of Henry III (1039-1056) and the banner at Möslén in 1080 all bore the device of an eagle. Henry I had hung round the neck of his son-in-law Geoffrey of Anjou a shield with golden lions. Richard I used a seal of three leopards and his brother John, Count of Mortain, that of two. See the *Enc. Brit.*, Vol. XIII, p. 312.

Holy Prophet's banner we get the following record in the Mishkāṭ (I'qāḍ-u-Ālaṭil-Jihād):—

(عشتم) وَعَنْ ابْنِ عَبَّاسٍ قَالَ كَانَتْ رَايَةُ نَبِيِّ اللَّهِ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ سُودَاءَ وَلِوَاءُهُ أَبْيَضٌ - رَوَاهُ الْيَرْمُذِيُّ وَابْنُ مَاجَةَ.  
(عشتم) وَعَنْ مَوْسَى ابْنِ عَبْدِ اللَّهِ مَوْلَى مُحَمَّدِ بْنِ الْقَاسِمِ قَالَ بَعَثَ مُحَمَّدُ بْنُ الْقَاسِمِ إِلَى الْبَرَاءِ بْنِ عَازِبٍ يَسْأَلُهُ عَنْ رَايَةِ رَسُولِ اللَّهِ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ فَقَالَ كَانَتْ سُودَاءَ مُرْتَبَعَةً مِنْ عَمْرِئٍ - رَوَاهُ أَحْمَدُ وَالْيَرْمُذِيُّ وَابْنُ دَاوُدَ -  
(عشتم) وَعَنْ جَابِرِ بْنِ عَبْدِ اللَّهِ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ دَخَلَ مَكَّةَ وَلِوَاءُهُ أَبْيَضٌ - رَوَاهُ الْيَرْمُذِيُّ وَابْنُ دَاوُدَ وَابْنُ مَاجَةَ.

These traditions show that (a) the Holy Prophet's "rāyat"<sup>10</sup> was of black square-sheet and (b) his "liwā" was white, when he entered Mecca in Ramaḍān, A.H. 8 (= January, A.D. 629). This was the time when he declared complete peace and safety for all and it is just possible that it is only after this date that the white flag has become the symbol of peace for all nations of the world (n. 13, infra).

Fortunately we have got a manuscript by Jāru'llāh Ghanīmī in the Bankipore Library, known as "Risālatu'l-alwiyah" (a treatise on flags), which deals with the Holy Prophet's different banners and is based upon

<sup>10</sup> There is a difference of opinion regarding the meanings of "rāyat" and "liwā". Some call the former a "big banner" and the latter a small one. Others assert the other way. In the treatise of Ghanīmī, which we are discussing in the next pages, we get the same controversial account about this meaning on f. 4a:—

واللواء هو العلم الذي يحمل في الحرب يعرف به موضع أمير الجيش وقد يجعل في مقدمة الجيش وأول من عقد الألوية إبراهيم الخليل بلغه أن قوما أغاروا على لوط فعقد لواء وسار إليهم - وقال بعضهم صرح جماعة من أهل اللغة بترادف اللواء والراية أي فيه يطلق على كل اسم الآخر وعن ابن إسحاق وابن سعد أن الراية إنما حدث يوم حبر - انتهى.

"Liwā" is that banner which is fixed in the camp of the commander-in-chief and it is sometimes raised in front of the battle-array. The prophet Abraham was the first man to raise a "liwā". When he knew that some people attacked the prophet Sodom he raised it and went to him (for help). Some say that a group of lexicographers have asserted that "liwā" and "rāyat" are the same and applied for each other. Ibn Ishāque and Ibn Sa'd say that the word "rāyat" was originated on the day of the battle of Khaibar in Muḥarram, A.H. 7 (= May, 628).



authorities, like Ibn Hishām, Ibn Sa'd, etc. We give here some useful quotations from it:—

وذكر صاحب الرسالة الزهراء في جواز لبس العمامة الصفراء انه صلى الله عليه وسلم دفع للزبير بن العوام (يوري بدر) راية صفراء وعممه بعمامة صفراء وانه صلى الله عليه وسلم كانت له عمامة صفراء . . . . .

وجل اللواء وكان ابيض في غزوة بدر وسعد بن ابى وقاص . . . . . وقد كان للنبي صلى الله عليه وسلم لواء ابيض في ست غزوات واذان وبواط والعشيرة وبد والاولى وبد للعظمى وبني قينقاع واما في غزوة احد فكان له ثلاث الوية كما في الموهب ولم يعين صفحاتها وكذا الراية في غزوة ذي قرد وخيبر وفتح مكة وفي غزوة تبوك امر صلى الله عليه وسلم بكل بطن من الانصار والقبائل العرب ان يتخذوا اللواء وراية كما في المواهب قال وضح جماعة بترادف اللواء والراية لكن يروى احمد والترمذي عن ابن عباس كانت راية النبي صلى الله عليه وسلم سوداء ولواء ابيض ومثله في الطبراني عن بريدة وابن عدى عن ابوهريرة وزاد مكتوب فيه لا اله الا الله محمد رسول الله . . . . . وذكر ابن اسحاق وكذا ابو الاسود عن عروة ان اول ما حملت الراية يوم خيبر وما كانوا يعرفون قبل ذلك الا الالوية . والله اعلم .

. . . . . لا يخفى ان رسول الله صلى الله عليه وسلم كان اذا اراد ان يعث سريته عقد له اللواء ودفعه لأمير السرية فمن ذلك انه بعث عه حمزة في ثلاثين رجلا من المهاجرين وعقد له لواء ابيض وهو اول لواء عقد في الاسلام وحمله ابو مسرشد حليف حمزة ومن ذلك انه بعث عبيدة بن المارث في ستين او ثمانين راكبا من المهاجرين وعقد له لواء ابيض وحمله المقداد بن عمرو . واما في الغزوات فكثير ففتح مكة كان لواء رسول الله صلى الله عليه وسلم ابيض مكتوب فيه بالاسود من برد يمانية لا اله الا الله محمد رسول الله . وفي فتح مكة عقد الالوية ودفعها للقبائل وفيه عقد لابي راحة لواء ابيض وامر لالا ان ينادى من دخل تحت لواء ابي راحة فهو امن . وعقد لسعد لواء ثمر مرعيا ان ياخذ منه ويرفعه لانه يميز في غزوة حنين عقد الوية ورايات وجعلها بين المهاجرين على

مصدق بن ابي وقاص راية واعلى عمر بن الخطاب راية واعلى لواء الخزيج للنجاشي  
 بن المنذر ولواء الكلاس لاسيد بن خضير وفي غزوة تبوك دفع لواء الكلاس  
 عظم لاي بكر الصديق وراية العظمى لاسيد بن خضير وراية الخزيج للنجاشي  
 بن المنذر ودفع لكل بلن من الانصار قبائل العرب لواء او راية . . . . .  
 . . . . . كان لواء الكافي غزوة واذن  
 ابيض وكان مع عمه حمزة وفي غزوة بواط كان ابيض وكان مع سعد بن ابي  
 وقاص وفي غزوة العشيرة كان لواء الكافي ابيض مع علي بن ابي طالب وفي غزوة  
 بدر الكبرى دفع صلى الله عليه وسلم اللواء الى مصعب بن عمير وكان ابيض كاللؤلؤ  
 صلى الله عليه وسلم رايتان سوداوان احدهما مع علي بن ابي طالب كرم الله  
 وجهه اى ويقال لها العقاب كانت مرطبا ليشه . . . . .

وفي غزوة قينقاع كان لواء الكافي ابيض بيد عمه حمزة بن عبد المطلب رضي الله عنه

وعن سعيد بن المسيب ان راية النبي صلى الله عليه وسلم يوم احد مرطبة  
 اسود وراية الانصار يقال لها العقاب . . . . . ان راية الانصار  
 تسمى العقاب كما ان راية النبي صلى الله عليه وسلم تسمى بذلك . . . . .

Now we give here a free translation of the above passages:—

The writer of "Risālatu'z-Zahrā" speaks about the permission to put on a yellow turban, saying that in the battle of Badr (Ramaḍān, 2/March, 624) the Holy Prophet gave a yellow "rāyat" to Zubair bin 'Awwām and also a yellow turban to him and he himself had a yellow turban for his head. . . . . In the same battle he had a white "liwā" in the hands of Sa'd ibn Abī Waqqāṣ. . . . . The Prophet's "liwā" was white in the battles<sup>11</sup> of Waddān (Ṣafar, 1/August, 622), Buwāṭ (Rabī' II, 1/October, 622), 'Ushairah (Jumādā I, 1/November, 622), the first campaign of Badr (Jumādā II, 1/December, 622) the great campaign of Badr (Ramaḍān, 2/March 624) and Banī Qainuqā' (Shawwāl, 2/April, 624); but in the battle of Uḥud (Shawwāl, 3/March, 625) he had three "liwās", as we know from al-Mawāhib, and there is no peculiarity attached to them. Similar (white) was his "rāyat" in the battles of Dhū-Qarad (6/627), Khaibar (Muḥarram, 7/May, 628) and on the victory of Mecca (Ramaḍān, 8/January, 630). In the battle of Tabūk (Rajab, 9/November, 630) he had ordered all the platoons of the Ansār ("Helpers") and other (Arabian) tribes to have their respective

<sup>11</sup> I have taken these dates from Ibn Khaldun (Tr. Aḥmad Ḥusain), Book II, Vol. III, 1927, p. 62, seqq.

"*liwās*" and "*rāyats*". This is what we know from al-Mawāhib. Some people call "*liwā*" an equivalent for "*rāyat*", but Aḥmad and Tirmidhī quote from Ibn 'Abbās that the Prophet's "*rāyat*" was black and his "*liwā*" was white. Similar is the quotation in the *Ṭabarānī* from Barīda and Ibn 'Adī's rhapsody from Abū Huraira, with the addition that the legend (*kalima*) was written on it (the latter)..... Ibn Is-ḥāq states and similarly Abu'l-Aswad from 'Urwah ibn Zubair that a "*rāyat*" was first raised in the battle of *Khaibar* (Muḥarram, 7/May, 628) and it was not known before that date but the "*liwā*"..... It is to be remembered that whenever the Prophet intended to send a "*sariyya*"<sup>12</sup> he made a "*liwā*" for it and gave it to its commander. So, when he sent his uncle Ḥamza at the head of thirty Muhājirs ("the Emigrants"), (most probably in 1/622) he prepared a *white* "*liwā*" for him. It was the first "*liwā*" of Islām and Abū Marthad carried it behind Ḥamza. Similarly, (in the same year) he sent another cavalry of sixty or eighty Muhājirs under the command of 'Ubaida ibn Hārith, and Miqdād ibn 'Amr carried the *white* "*liwā*". In several battles, as on the victory of Mecca (Ramaḍān, 8/January, 630) the Prophet's "*liwā*" was of white Yaman cloth, on which the 'Kalima' was written in black. On that victory he got prepared several "*liwās*" and gave them to the different tribes. He gave one *white*<sup>13</sup> "*liwā*" to Abū Rawāḥa and asked Bilāl to announce that whosoever came under that banner would be safe and secure. The Prophet had prepared one "*liwā*" for Sa'd as well and later on asked 'Alī to give it to the former's son Qais. In the battle of *Hunain* (*Shawwāl*, 8/January, 630) he prepared several "*liwās*" and "*rāyats*", which he distributed amongst the Muhājirs. He gave "*rāyats*" (in that battle) to Sa'd ibn Abī Waqqāṣ and 'Umar ibn al-Khaṭṭāb. Ḥubāb ibn al-Mundhir was given the "*liwā*" of the *Khazraj* tribe and Usaid bin Ḥudair that of the *Aus*. In the battle of *Tabūk* (Rajab, 9/November, 630) he gave his big "*liwā*" to Abū Bakr and the '*rāyat*' to Usaid ibn Ḥudair, the "*rāyat*" of the *Khazraj* to Ḥubāb ibn al-Mundhir and other "*liwās*" and "*rāyats*" to other tribes..... The Prophet's "*liwā*" was white in the battles of *Waddān*, *Buwāt*, '*Ushairah* and in the great campaign of *Badr*, and was in the hands of Ḥamza, Sa'd ibn Abī Waqqāṣ, 'Alī ibn Abī Ṭālib and Muṣ'ab bin 'Umair respectively. And before him (the Prophet) there were two *black* "*rāyats*", one being in the

<sup>12</sup> "*Sariyya*" is different from "*ghazwa*" (=battle). The former was a sort of deputation sent by the Prophet and some one of his companions headed it. He generally sent them for making a truce with the adjoining people, although such deputations used to go well-armed in order to defend themselves, if a war ensued. For details see Maulana Shibli's *Siratun-Nabi* (second edn.), Vol. I, pp. 531-32, 357 n., 289 n., etc.

<sup>13</sup> Although white "*liwā*" was used on earlier occasions in Islam, yet this time it became the emblem of peace and safety for all who came under it,

hands of 'Alī ibn Abī Tālib (may God ennoble his countenance). It was made of the head-dress of the Prophet's wife. 'Āyisha and was called 'Uqāb (= "The Eagle"<sup>14</sup>). . . . In the battle of Qainuqā' the Prophet's "liwā" was white and it was in the hands of his uncle Ḥamza ibn 'Abdīl-Muṭṭalib. . . . From Sa'īd ibn al-Musayyab we know that the Prophet's "rāyat" was of black cloth in the battle of Uḥud and that of the Anṣār was called al-'Uqāb and the "rāyat" of the latter was named after that of the Holy Prophet. This is a concise account of Ghanīmī's treatise and we hope to give other details in some paper of wider scope very shortly. We, therefore, like to pass on to the later periods of Islamic History, and in order to connect them with the Ghaznawide period, for which some fresh record will be noticed, we may just summarise here Margoliouth's essay on the symbols of the later Muslims (Hasting's *Enc. of Religion and Ethics*, XII, 145 seqq.) and also a note in Ma'ārif (January, 1944, pp. 56-57):—

After the Prophet's near successors (the four Orthodox Caliphs) the Muslim rulers adopted different symbols, but many of them followed in the footsteps of the Apostle of God. Thus the flag of the Umayyad Caliphs was *white* and that of the Abbasides *black*, with the legend in white, "Muḥammad is the Apostle of God". The latter adopted black colour in order to express their attachment with the deaths of Hāshimī martyrs, but Māmūn (d. 218/833) gave up black banners and clothes and adopted green colour for them. The Alides, too, had a green<sup>15</sup> flag and the Zangī

<sup>14</sup> Krishna is also said to have had an eagle's device on his banner and so the Romans had. See n. 9, *supra*.

<sup>15</sup> The Urdu poets Anīs and Ḍabīr ascribe *green* flag to the army of Imām Ḥusain, with the figure of a human hand, with out-stretched fingers, on the top of it. It indicates belief in (1) Muḥammad, (2) 'Alī, (3) Fāṭima and their sons, (4) Imām Ḥasan and (5) Imām Ḥusain. But such a standard was not known in that (Islamic) age. Anīs also ascribes *black* flag to the army of Yazid. We may quote their verses here for an interesting record, but we should not take them as authentic:—

مرثیہ انیس: ع جاتی ہے کس شکوہ سے رن ہر رخسار کی فوج  
رایت وہ سبز کھڑا سدا دکھائی داماں پاک نشانی اکت کا بادبا  
چرخ شال پتھر خوشید زرخشا چرخ تابل کوئے تنی بادشاہ

مرثیہ انیس:—  
جب رن ہوں بے ملطی کا علم ہوا فوج خدا پر سایہ ابر کرم ہوا  
وہ نشان مس غم کی جگہ کھلاں غم کو تیزی کے لئے قابل کوان  
مرثیہ ۱۰: ع پیدا شاہجہاں ہر کی مقرر جب ہوئی۔  
چرخ شال پتھر خوشید زرخشا چرخ تابل کوئے تنی بادشاہ  
انیس جلد دوم صفحہ ۷۸۲ (دکان پورہ ۱۹۱۸ء)۔  
زادہ علم سیاہی و زلفیت تخی دہری پس قی پیدائش

(255/869) took a strip of silk as his standard, with a Quranic legend in red and green. The Fatimide Caliphs of Egypt (297/909–555/1160) had a *crescent* on their flags, accompanied by a *lion* of red and yellow satin. The Almohads (A.D. 1159), too, had a *crescent* on their flags. This symbol of crescent is said to have been inherited from Keroëssa, the mythical foundress of Byzantium and the supposed daughter of the Moon Goddess. Along with the stars (molets) the crescent figured as an ornament and rarely as a device on the coins of Byzantium.

In about A.D. 1270 a mosque of San'ā in Yaman had a minaret with a crescent as an ornament. It became the Turkish symbol as well and we find the following note in the *Enc. Brit.* (11th edn., Vol. X, p. 462) about it:—

“The Turkish crescent moon and star were the device adopted by Muḥammad II, when he captured Constantinople in 1453. Originally they were the symbol of Diana, the patroness of Byzantium, and were adopted by the Ottomans as a triumph, for they had always been the special emblem of Constantinople, and even now in Moscow and elsewhere the crescent emblem and the cross may be seen combined in Russian churches, the crescent badge, of course, indicating the Byzantine origin of the Russian church. The symbol originated at the time of the siege of Constantinople by Philip, the father of Alexander the Great, when a night attempt by the besiegers to undermine the walls was betrayed by the light of a moon, and in acknowledgment of their escape the Byzantines raised a statue to Diana, and made her badge the symbol of the city. Both the man-of-war and mercantile marine flags are the same, but the imperial standard of the Su'lṭān is *scarlet*, and bears in its centre the device of the reigning sovereign. ....”

According to Zinkeisen, as quoted by Margoliouth, such version about the origin of the Turkish symbol is wrong. He says that a golden crescent (and according to Von Hammer Purgstall, a silver crescent) had been primarily adopted by the Saljūq Turks after the Janissaries<sup>18</sup> (whose blood-red flag, specially of their cavalry, had a crescent and no star) and it was displayed on all the flags and standards of viziers, beglerbegs, etc.

Now we turn to Persia where the symbol of crescent and stars was common. Even in the Pre-Islamic days the coins of Yazdjird, *Khusrav-i Parvez*, etc., contained the device of crescents with stars and so they

<sup>18</sup> They were a sort of body-guards in the time of the Turkish Sultan Murad I (d. 1389).

were also under the Muslim governors<sup>17</sup> of Persia at least from the year 31/651.

In the *Armughān* (Sep.-Oct., 1930), a Persian Journal of Tehran, we find a useful article "Tārīkhcha-i-Sher-o-Khurshid", which first discusses the popularity of a 'lion' and 'Sun' as the important figures of the sky and land. The author then briefly traces their history, saying that the importance of a 'lion' was enhanced due to the fact that several kings of France, Rome and Armenia were named as Louis (= a lion) and consequently they (specially Louis II) had the figure of a 'lion' on their coins and flags. Louis II of Armenia who had supported the Christians in the 3rd Crusade and who had been promised a crown of sovereignty by Frederick Barbarossa of Germany, received a standard with the figure of a 'lion' after the death of the latter in 1190 and on the recommendation of his son to the Pope of Rome. Louis VI had particularly adopted 'lion' as the symbol of his dynasty. Similarly the Mongols of *Khurāsān* and the *Ṣafawī* kings of *Mazendarān* had the device of a lion on their coins.

Several poets also refer to this device, as the famous poet *Rūmī* (d. 672/1273) does:—

ماہر شیریں و شیران کلم  
علام از باد باشد و مہدم

*Fakhru'ddīn As'ad Gurgānī*, who prepared a versified translation of the "Wis-o-Rāmīn" towards the end<sup>18</sup> of the 5th century A.H. (= beginning of the 12th century A.D.) and in the reign of *Malik Shāh Saljūqī* (d. 485/1092) says, about a battle, therein:—

پہرستان شد دست از درختان چو دیبای و درختان مرد و زن  
فراز ہر یکے نندیں یکے مرغ عقاب و ہار با طاؤس و کبیر مرغ  
زیر ماہ در شیر آبجوں رنگ تو گشتی شیر دارد ماہ در پنگش

The poet refers in these lines the Sasanide (A.D. 226–632) flags, having the figures particularly of *lion* and *moon* (unlike the golden cock of the Achæmenians, B.C. 550–330) and he cannot be said to have any inference from the contemporary *Saljūqs*, who had quite a different banner, containing the device of a *crescent* on the top.

<sup>17</sup> For details see the *Oriental College Magazine*, Lahore, Nov. 1942, p. 10, seqq. For *Farīdūn's* "Kāviyānī" banner see "*Irān ha-'ahd-i-Sāsāniyān*" (Tr. Dr. M. Iqbal), p. 677, seqq. For different Muslim crowns, canopies and other royal insignia see the *Ma'ārif*, Azamgarh, January 1944.

<sup>18</sup> Prof. Mahmud Sherani gives the date of its composition as 440/1048 in the *Urdu*, Delhi, January 1943, p. 4.

Another great poet Nizāmī Ganjawī who wrote his doublet "Lailā-o-Majnūn" in 584/1188 and dedicated it to Akhtisān ibn Manūchehr, brings out these lines about the war of Naufal with the tribe of Lailā:—

خورشید درفش ده زبانه      چون سحر دیده و بخت  
گشته ز می از دم چو دریا      سنگ البرد حرا ز شتر یا  
هر شیر سیاه کایستاده      چون مایه سید و بان کشاده  
غیران سیاه در دریدن      دیوان سپید در ویدن

In these lines the poet cannot be expected to have had any idea of the flag of that fictionary battle, hence they suggest that he had an inference from that of his own age and it contained the device of a "Sun" in the black field.

Then the writer says that the "Sun" is related to "lion" (Leo) because of their zodiacal affinity and that Shāh Ṭahmāsp Ṣafawī (d. 984/1576) who was born (on 26-12-919/28-1-1514) when the Sun was in the "Ḥamal" (= "Ram") position of the zodiac, adopted his symbol as "a lion on a sheep" in his coins. . . . The writer of the "*Mukhtaṣar-i-Ta'rikh-i-Duwal*", who lived just after *Ghiyāthu'd-Dīn Kai-Khusrau*, a Saljūq ruler of Asia Minor in the middle of the 7th century A.H. (= 13th century A.D.), says that he fell in love with a beautiful Christian lady of Gurjistān, whom he married and later wanted her device to be inscribed on his coins, but his courtiers advised him not to do so. Consequently, he inscribed 'Sun' over the popular 'lion' of his coins, believing that her face was so bright. The writer then asserts that there are no such coins of an earlier date and that from that time onwards this device of coins became popular and was adopted as symbol by the Persian courts as well.<sup>19</sup>

### *The Ghaznawide Banner*

From Margoliouth (Hasting's *Enc.*, XII, 146) we know that Maḥmūd of Ghaznī (d. 421/1030) had introduced the *crescent* as a sign of rule and domination in India. The contemporary authorities (e.g., *Ta'rikh-i-Gardizi*, Qazvinī, pp. 49, 69, 76, etc.) say that he and his successors<sup>20</sup> submitted and paid homage to the Abbaside Caliphs and received diplomas (confirming their sovereignty or victory), titles and banners in return. As

<sup>19</sup> Prof. Browne gives the title page of the oldest daily paper "*Khulāṣatul-Hawādith*", in *fac-simile*, in his "*Press and Poetry of Modern Persia*". It was published from 1316/1898 to 1321/1903 and bore, on its top, the device of a lion, with a sword in its right claw and a sun and a crown over it.

<sup>20</sup> Maulana Sulaiman Nadvi has written two books *Caliphate and India* and *Caliphate and the Muslim World* in Urdu, showing the caliphs' spiritual hold on different Muslim rulers.

these Caliphs had adopted *black* colour they would have certainly sent such banners<sup>21</sup> to Maḥmūd. His court-poet Farrukhī (d. 429/1038), while praising his brother Yūsuf, the commander-in-chief of India, refers to the *black* canopy and (probably to the black) banner thus:—

۲۲ چتر سیہ درایت تو سایہ نگدست در ہند بہر جا کہ منے دست

Maḥmūd's grandson Ibrahim (d. 492/1099) had a *lion's* device on his banner, as we know from his court-poet Abu'l-Faraj<sup>23</sup> Rūnī (d. after 497/1104):—

۲۴ پوشیر رایت شیر لیر او بیل۔ پوشا بخ آہر شاخ درخت لوبلہ

His son Mas'ūd III (d. 508/1115), too, had the same device, as the same poet says:—

۲۵ در جہد باس او بشیر فلک اگر اندر شود بہر شیر علم

Again from the same poet we know that Mas'ūd III's brother Saifu'd-Dawla Maḥmūd had also the same sort of banner:—

۲۶ چندان علم شیر بر افراشت کہ بغزو زایشان بفلک برج اسد بے دوا شل

The same banner belonged to Sherzād (d. 509/1116) as well, the eldest son of Mas'ūd III, as we know from the poet Mas'ūd-i-Sa'd-i-Salmān (d. 515/1121):—

<sup>21</sup> Sanjar Saljūqī (d. 552/1157) had also a black canopy, as this verse shows:—

چوں چتر سجری بخ بستم سیاہ باد با فقر کے بود بوس نیک بستم

In the *Miftāḥut-Tawārikh* by Thomas William Beale (Agra ed., 1848, p. 69) this verse is said to belong to Shaikh 'Abdul Qādir Jilānī (d. 561/1166), but in the *Intikhab-i-Shu'arā-i-Mutaqaddimin* (Hamīdiya Library, Bhopal, No. 3, f. 343 b) it has been ascribed to 'Irāqī (d. 688/1289).

<sup>22</sup> *Intikhab-i-Farrukhī*, Lahore, 1354, p. 25. 'Unsuri (d. A.D. 1040) also suggests black banner (Lucknow, 1922, p. 42):—

بجائے پر نیاں بنی نہادو رواں خلیش بر بستے پیڑ

<sup>23</sup> For Rūnī's dates see the *Oriental College Magazine*, Lahore, May 1938, p. 55.

<sup>24</sup> Rūnī, Chaikēen ed., p. 61. Unsuri (*Ibid.*, pp. 89–90) would suggest that Maḥmūd had probably, a lion's device on his banner, although no definite proof is available. His verses are:—

بروں بر دلم تو ز مغز شیراں ہویش بروں بر دکریم تو ز روے پیراں چین  
بدیع لفظ کو تو راست و افکار صدف بزرگ باس تو شیر است و دغا گار چین

<sup>25</sup> Rūnī, Chaikēen, p. 89.

<sup>26</sup> *Ibid.*, p. 77.



۲۷ شہتِ اوبس کہ کو شیران کم شیر گردن باند و شیر علم

Mas'ūd III's another son Bahrām Shāh (d. 552/1157), too, had the same sort of banner, as Sanā'ī (d. 545/1150) says:—

۲۸ ہر کاشاہ مابتافت عنان شیر ریاہ او شود ہر جہاں  
رے ریاہاں بہ تیغ کردہ مسلم نیزہ را شیر کردہ شیر علم

Bahrām Shāh's court-poet Sayyid Ḥasan (d. 555/1160) says likewise:—

۲۹ آں چنان شیر علم بر بفر از دشن گوی از چرخہ خورشید کند آب خوری  
زندہ از باد شوبہ بد چون شیر علم تکیہ بر خاک کن خیرہ چوں نقش ایوان

Like Maḥmūd, Bahrām Shāh had also a *crescent*, as his symbol, on his banner, as we gather from the following verses of the same poet:—

۳۰ ماہ اگر گشتے ز ماہ رایت او بہرہ مہر اگر بے ز ماہ رایت او ماہ فار  
بگذشت ملال رایت شاہ از ماہ من پاس بگل دودست کوتاہ انہا  
دورافت ادم بقصد بدخواہ از راہ اے شاہ زبندہ دور کن کاہ از کاہ

The pennon of his banner was *black* like that of his forefathers, as the same poet says:—

۳۱ اے رفت زین رایت او دیدہ بہ حمایت سیاہی  
مہر ہم شہلے شاہ کہ از رایت شیر نگ در کہ چوں زلف بتاں ماہ گرفت

Like Maḥmūd, Bahrām Shāh, too, had a *black* canopy and his (latter's) crown was *white*, as we find in the following verses of Sayyid Ḥasan:—

۳۲ مگر خیر تو شاہ سیاہ گودن غمایت گونہ تاج تو صبح سپید کار گرفت  
تجبت چہر سیاہت چیت مرغ و کرک لاہرم تاشد بہ شش سپید از انیل  
دونسکہ برنجی تو تاج سپیدم گیر کت رسایہ چہر سیاہ را  
نکب دگر وار مید زان کہ چادت نید صبح ز تاج سپید شام چہر سیاہ  
از تاج رفت فلکے صبح سپید پوشش وز چہر تست خالے شام سیاہ وار

<sup>۲۷</sup> His diwān, Tehran, 1318, p. 563.

<sup>۲۸</sup> *Hadiqa*, Bombay, p. 340 and Lucknow, p. 659, respectively.

<sup>۲۹</sup> *India Office MS.*, No. 931, ff. 44a and 128b respectively.

<sup>۳۰</sup> *Ibid.*, ff. 21b, and 182b, respectively.

<sup>۳۱</sup> *Ibid.*, ff. 142a and 110b, respectively.

<sup>۳۲</sup> *Ibid.*, ff. 20b, 22a, 113b, 114a and *Paris MS. Suppl.* 797, f. 10b, respectively.

The poet Mas'ūd-i-Sa'd has also referred to Bahrām Shāh's black canopy:—

آن خیمه ز دوش دولت فرا گشت روئے او شد چون چتر آبیانه <sup>32</sup>

From the *Adābu'l-Harb* (Lahore, May 1938, p. 9) we know that Bahrām Shāh's father Mas'ūd III had a *falcon* on his canopy and so the former had, as we find in a verse of Sayyid Ḥasan in his praise:—

نمایک اوج تخت او فلک را بر کن آرد نجمه باز چتر او جہاں را زیر پر آرد <sup>34</sup>

This is all that we know about the Ghaznawide banner<sup>35</sup> and canopy.

<sup>32</sup> *Badayuni Cal.* 1868, Vol. I, p. 43. Bahrām's brother Malik Arslan (whose history I have published in the *Ma'ārif*, Azamgarh, Nov.-Dec., 1941), too, had a black canopy as Mas'ūd-i-Sa'd (pp. 664, 490) says:—

گوید سپہر باشد دولت سپید روئے نامہست چتر یک رنگ ارسلان سیاہ  
روئے دولت سپید و قصر سپید روز دشمن سیاہ و چتر سیاہ

These rulers adopted black canopy probably because of the Caliph's *black litter*, to which *Khāqānī* also refers:—

و آن ہونچ غلیہ متوج بہ ماہ ز ر۔۔۔ چون شب کز آفتاب ہی تاج بر سرش

<sup>34</sup> *India Office MS.*, *ibid.*, f. 95a. Sanjar (n. 21, *supra*), too, had a *falcon* on his (black) canopy, as Anwari (Lucknow, 1880, p. 103) says:—

سلطان سلاطین کہ باز چترش در مکر کہ سلطان شکار باشد

But in the Bhopal MS. (n. 21, *supra*), f. 359b, this verse has "Sher-i-chatrash" instead of "bāz-i-chatrash".

<sup>35</sup> Through the spiritual hold of the Abbaside Caliphs over these rulers we know that the Ghaznawides had inscribed their (formers') name on their coins. But a crescent and a star appear on the coins of Bahrām's grandson *Khusrau Malik* (d. 583/1187). See *Rodgers' Catalogue*, Cal. 1896, Part IV, p. 161. From the same book (p. 160, etc.) we know that the coins of Malik Arslan, Bahrām, etc., contained the device of a bull (cow?) and over it the words "Shri Samanta Deva" in Hindi. I have seen these coins with Professor Sherani at Lahore.

## A CRITICAL DISCUSSION OF THE STATUS OF SENSE-DATA

### Part IV. The Real and Apparent Secondary Qualities of Things

BY DR. W. S. BARLINGAY, M.A., PH.D. (LONDON), BARRISTER-AT-LAW

HAVING considered the way in which the contrast between the 'real' and the 'apparent' arises in respect to primary qualities, I can now return to the consideration of the secondary qualities of things, and inquire how this same contrast evinces itself in their regard. I think the best mode of procedure will be to select typical instances of this contrast, and to try to indicate the kind of explanation to which they are susceptible.

In the first place, we may refer to those cases in which the secondary qualities of a thing vary owing to varying objective conditions. Thus, metals when heated change their colour; and it may be permissible to speak of the real colours of metals and their apparent colours when all that would be meant by 'real' colours is the colour which these metals have under what are to us ordinary physical conditions. Or, to take another instance. I have already differentiated between microscopic and macroscopic secondary qualities. We may assume that the ultimate constituents of matter are protons and electrons having the microscopic secondary qualities  $p$  and  $e$  respectively. A physical thing will then be a complex of these constituents with a particular structure; and, for all we know to the contrary, its macroscopic secondary qualities  $m_1$ ,  $m_2$ , etc., may be quite different from either  $p$  or  $e$ , which latter we can never observe through the senses. In this case, again, it may be permissible in ordinary language to speak of  $p$  and  $e$  for certain purposes as being 'real' secondary qualities of matter and to speak of the complex as 'appearing to have' to our sensuous apprehension the qualities  $m_1$ ,  $m_2$ , etc. It is, however, clear that these instances present no difficulties. For the so-called 'apparent' secondary qualities may be as objectively 'real' as the qualities which are thus designated 'real' and that the function of our sense-organs is merely to act as instruments of their apprehension.

In the second place, the contrast may arise from the circumstance that we fail to observe a certain secondary quality which in fact characterizes an object. This may occur (a) because of some defect in the sense-organ in

consequence of which it fails to react to the appropriate stimulus corresponding to the quality in question. Thus it is found that in cases of red-green colour-blindness the retina is deficient in those parts which are sensitive to the rays correlative with either red or green or both. Or it may occur (b) because of some intervening object, which either wholly or partially prevents the appropriate stimulus from reaching the sense-organ. In the case, for example, of a person suffering from jaundice, a possible explanation of what occurs is this. In advanced stages of jaundice, at any rate, we know that certain parts of the eye become yellowish, so that between the retina and the outer world there intervenes, so to speak, a yellow screen, operating more or less after the fashion of yellow spectacles. This screen shuts out the stimulus correlative with the actual colours characterizing the object and the latter are not perceived. On the other hand, the yellow colour is projected, so to speak, on to the object, and makes it look yellow. The psychological factors involved in this projection will be more or less similar to those in the case of the after-images of the sun, which are cited by James.<sup>1</sup> Here, again, the yellow colour, which is perceived as belonging to the physical object does in fact belong to some real object, but owing to certain psychological conditions is misperceived as belonging to the particular object in the visual field. The explanation of the fact of snow on a mountain appearing to be red in the setting sun would seem to be very similar. Only in this case the screen is formed not by what is happening in the eye but by what is happening in the space between the snow and the observer. Or the contrast may occur (c) because of the percipient's failure to distinguish differences actually as, for instance, in Stumpf's case, where two patches of colour slightly differing in shade appear to be of the same shade.<sup>2</sup>

In the third place, the contrast may arise from the fact that the secondary quality, which appears to characterize a physical object, may not really characterize that object but some intervening event occasioned by what is happening in that object. Thus in the case of smells, tastes and sounds it seems to me not unlikely that what we immediately apprehend are the qualities of events taking place in the organs of the body and that these events are occasioned by the action of the physical things to which the qualities in question are commonly attributed. What, then, probably happens when one hears a clap of thunder is this. There is a certain electrical

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<sup>1</sup> Cf. *Principles of Psychology*, Vol. ii, p. 231. "Produce an after-image of the sun and look at your finger-tip; it will be smaller than your nail. Project it on the table, and it will be as big as a strawberry; on the wall, as large as a place; on yonder mountain, bigger than a house."

<sup>2</sup> See *supra*, p. 55.

disturbance occurring somewhere in the environment. Certain sound waves are thus produced which impinge upon the tympanum of the ear and occasion there vibratory motions. And what we immediately apprehend is the sound correlative with these vibratory motions. In that case, it is not a matter for surprise that a very loud sound should appear faint at a distance. For what we immediately hear is in fact sound in the ear; and it is a physical fact that as air-waves travel from their source they lose their original strength or amplitude. So that, although the air waves which start from the place of the electrical disturbance have great amplitude, that amplitude gradually decreases as they proceed upon their journey, until at length it can only give rise to a faint sound. It may, however, be objected that if what we immediately apprehend is the quality of an event that is occurring in the bodily organism, we have got to account for the fact that we locate it in the environment. The reply is that it is a case, so to speak, of unconscious inference. We have learnt by previous experience that, whenever we hear sounds of this nature, there are certain occurrences, happening in the environment, which are in some way connected with what we hear; and, to the ordinary man, these occurrences without the body are of far more import than bodily occurrences themselves. Whenever, therefore, there are auditory events occurring in the ear they are at once referred to their source; and by habit the whole process becomes so rapid that whenever an auditory event occurs we tend to think of it as occurring in a region other than that of the auditory organ. More or less a similar explanation would seem to hold good of the contrast between apparent and real tastes and apparant and real smells.

There is nothing here which in any way conflicts with the view I have been taking. It is true that we do not immediately apprehend the actual taste and smell of physical things or sounds in a region spatially removed from the body. But all the same what we do immediately apprehend are real qualities of events, which have as much a right to be called physical as the things to which in our mature experience the qualities in question are referred. Only it so happens that these physical occurrences are not as such of much consequence to us and that we use them as signs which indicate to us the presence of other occurrences outside the body, in which, for practical purposes we are interested. The function of the sense-organs is still to serve as instruments for the apprehension of qualities which are objectively real—the tastes, the smells, and the sounds, which are immediately apprehended being actual qualities of real physical events. And, *ex hypothesi*, the latter only possess these qualities in consequence of physical events in the extra-organic world likewise possessing them.

Lastly, the contrast may come about through the presence of revived factors, as in the case of illusions and hallucinations. Thus we may seem to hear a real sound, when all that is in truth present is an auditory image, or we may seem to see a specific colour pervading a certain region of space merely because we imagine that a physical object with that colour exists in that place, as, for instance, when we seem to see the head of a man in a portion of space above that occupied by a suit of clothes in a wardrobe or shop window.

These, then, are some of the ways in which it is possible to account for the circumstance that physical things appear to have characteristics different from what they in fact possess. But, we may be faced with difficulties of an opposite description. How, it may be asked, do we *know* that physical things do in fact possess such and such qualities, when all that can be gathered from any perceptual situation is that such and such a physical thing, *appears to have* such and such specific qualities? How do we *know*, for instance that a penny is round and flat and has a specific shade of brown, when in various perceptual situations in which we are said to look at this same penny, all the information that we can gather about it is of the form, 'this penny *appears to be* elliptical'? To argue that we do sometimes observe the penny to be round and flat and brownish is irrelevant. For these perceptual situations by themselves yield no more information than that under certain specific conditions the penny *appears to be* such; and *prima facie* there is no reason why we should prefer the information conveyed in one perceptual situation rather than in another. And these considerations would seem to suggest that we are, by the very nature of the case, precluded from having any apprehension of things as they are in themselves.

Now, it must be admitted that we cannot possibly know the qualities or characteristics of things as they are in themselves apart from the conditions under which they are perceived. But this circumstance does not of itself constitute a valid objection to the view I am trying to develop. It is a circumstance which every theory of perception has to recognise; and, therefore, for that very reason, recognition of it can decide neither for nor against the truth of any one theory. When the question is raised whether through perception we can apprehend things as they actually are, it may be urged with perfect justice that we can only apprehend them as they appear to us to be. When, however, the objector goes on to deny that we can apprehend things as they actually are because we can only apprehend them as they appear to us to be, he is oblivious of the consideration that this must be so in any case. Our apprehension of things must be of them as they appear to us not merely if we do *not* apprehend them as they actually are but equally if we *do*

apprehend them as they actually are. I am inclined to think that the circumstance mentioned is felt to be an objection because it is confused with considerations of the following kind.

(a) It is frequently supposed that we do *somehow know* what the actual qualities of physical things are in themselves, that we do *know*, for example, that a penny is in itself round and flat. And yet the theory we are propounding can, it is thought, offer no intelligible account of how we come to know this. For, admittedly, all it can tell us is that the penny *appears to have* such and such qualities under such and such conditions. And, if we put together all the information that we can get from all possible perceptual situations, in which we may be said to perceive the penny, it will bring us no nearer to knowing what the real qualities of the penny are in themselves. I think that this criticism would be valid if it could be granted that in ordinary life we do *know* quite certainly what the qualities of physical things are in themselves. But such a supposition is based on a misconception of the nature of the knowledge conveyed by such ordinary expressions as 'the penny is round and flat', 'this paper is white', 'this book is nine inches long', and so on. It is clear that such expressions do not convey to us exact knowledge of the actual qualities of things and that they furnish another instance of how the grammatical form is misleading if taken to indicate the logical form of propositions. Consider, for instance, the proposition, 'this book is nine inches long'. As thus expressed, the sentence is misleading in more ways than one. In the first place, its grammatical form conceals its logical form. Grammatically the sentence is of the same form as 'S is P'. But logically it expresses a relation between the length of the book and the footrule. In the second place, it is misleading because it seems to mean that the relation between the length of the book and that of the footrule is the exact mathematical ratio of 3:4. But clearly no such thing is meant when we say that the book is nine inches long. The latter expression is rather a conveniently shorthand way of expressing a complicated state of affairs, namely, that if we superpose a footrule upon the book the upper and lower edges of the book will appear to coincide with certain marks on the footrule, and that if there be in fact some deviation the deviation will be so small as not to be observable by a human eye, and, therefore, negligible for all practical purposes. Now, the same is true of such an expression as 'this paper is white'. The information that is actually conveyed by this sentence is not at all that this paper is white in itself. It really sums up the information that under normal conditions of illumination and other physical and psychological conditions the paper *appears to have* a specific shade of white. All these expressions through which we seem to convey certain knowledge about

the actual qualities of things as they are in themselves are, then, to be interpreted in terms of qualities and characteristics which physical things *appear to have*; they cannot be regarded as giving us information about the characteristics of physical things as they are apart from being perceived.

(b) I have argued that the sensum theory is unsatisfactory because what is called a sensum is admittedly regarded as a *tertium quid* between the apprehending mind and the physical thing. Is not the same true, it may be asked, of the 'relational theory of appearing'? On either view we seem to be precluded from apprehending reality as it actually is. If a penny, for instance, be in fact round and flat, there is no conceivable way in which we could certainly know this fact. There would seem to be no escape from the opaque sphere of 'appearances', which close in upon us from every side, shutting out actually real things from our view.

This argument is, I think, based on a prevalent confusion. Let me take an analogous case. Suppose we want to measure the length of a particular rod. Then what we should probably do would be to take a footrule and superpose it upon the rod. The distance between the two marks on the footrule with which the ends of the rod coincide will obviously represent the length of the rod. Suppose, now, that the length of the rod thus measured under ordinary conditions is found to be nine inches. Then, it is clear, as already pointed out, that the nine inches represent not an absolutely exact relationship between the footrule and the rod, but that under more adequate conditions of observation the length of the rod may be found to be a little more or less than nine inches. There are here two points calling for notice. In the first place, our knowledge of the length of the rod has degrees and is more or less accurate according to the conditions of perception. In the second place, although the measures under different conditions differ, we are all the while measuring the same thing, that is the length of the rod. It is about the length of the rod that we are knowing this or that fact. In a similar way, it is about the physical thing, the penny, that we are knowing that it *looks* elliptical under such and such conditions. The fact that the penny looks smaller from a distant place than from a near one does not in any way involve that it is not the penny about which we are knowing some fact. It is, however, easy to confuse the two propositions, 'I am knowing that the penny looks elliptical' and 'I am knowing an elliptical appearance of the penny', and to suppose that the knowledge I am having is not of the penny but of an elliptical appearance. And it is this confusion, which seems to me to be at the root of the argument, I am considering. That argument is valid as against the sensum theory because according to it there is in fact an entity elliptical in shape which we are



immediately apprehending and which is numerically distinct from the physical thing. And so far as I can see, it is only about this entity that, on the sensum theory, we can know anything at all. According to the 'relational theory of appearing,' on the other hand, there are only two existent entities involved in a perceptual situation, the apprehending mind and the object, and it is about the object that the mind is knowing some fact, to the effect, namely, that *it* appears to be so and so.

It may, however, be urged that we are treading on thin ice and that the difference between the sensum theory and the 'relational theory of appearing' is not really so.

*(Incomplete)*

## REVIEWS

**THE METAPHYSICS OF VALUE (VOL. I)—GENERAL PRINCIPLES AND THE KINGDOM OF VALUES.** By K. R. Shreenivasa Iyengar, M.A., Assistant Professor of Philosophy, Maharaja's College, Mysore University, 1942. Pp. xxxi, 645. Price Rs. 5.

The book can certainly be regarded as a valuable contribution to the subject with which it deals. The volume under review consists of two parts: Part I treats of the general principles of value, and Part II deals with the kingdom of values. According to the author's plan, the second volume of the book will be mainly devoted to a discussion of the metaphysical implications or philosophical deductions of the value theory expounded by him. We have to wait therefore for a complete treatment of the subject until the second volume is published, and it is only then that a fair review of the author's own philosophical portion can be undertaken.

In the present volume the author has made out a case for the science of values, which he calls Normatics or Axiology, to be treated as a separate science, and not as a branch of ethics or even of philosophy. According to the author "the Great Error" in modern Ethics is to confuse 'good' as value in general with 'good' as *moral* value in particular. The question, therefore, with regard to the *summum bonum* of life is not one for ethical science but essentially one for the science of value. Similarly, according to him, while philosophy "attempts to rationalise human experience as a whole, the science of value (normatics, axiology) tries to evaluate that experience". Now while it may be admitted that like some of the other specialised branches of philosophy, for instance psychology, there is certainly a special scope for the development of a science of values, and that this has been evident in some of the recent works on the subject including the author's own present volume, it is difficult to see how such a science can be treated as entirely independent of philosophy or even of ethics. The title of the present work itself, *viz.*, "The Metaphysics of Value", would belie such a claim. It may be contended that certain kinds of values, for instance the economic and social values, are outside the scope of philosophy; but such an assertion can be made only on the assumption that philosophy is only metaphysics. The dependence of the science of value on the ultimate principles of philosophy should not, however, mean that it has no importance or intrinsic merit of its own as a systematic and detailed exposition of the general principles and different kinds of values. And in so far as the work under review really attempts a systematic and comprehensive discussion of such principles and an elaborate classification of different types of values,

it should make a substantial addition to the existing literature on the subject.

The author and the publishers deserve to be congratulated on the excellent printing and the general get-up of the book.

J. P.

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IMPORTANT INSCRIPTIONS FROM THE BARODA STATE. By A. S. Gadge. Published as Memoir No. II of Śrī Pratāpasīmha Mahārāja Rājyābhisheka Granthamālā, Baroda State, 1943.

We had occasion to notice Memoir No. I of the above-mentioned series in the last issue of this *Journal*. We have now to welcome Memoir No. II of the same series. It is very creditable for the publishers to bring out this volume within a year of the publication of the last, and it is a happy augury of the newly constituted series. The Memoir under review contains a set of twelve inscriptions in Sanskrit and Marathi, with translation, plates and index. The earliest of the inscription is dated Śaka 122 (200 A.D.), i.e., exactly fifty later than Rudradaman's Inscriptions and mentions his grandson Rudrasena ruling. The second inscription, though incomplete, is interesting in so far as it belongs, on palæographic grounds to about the 6th century A.D. and introduces to us a new and hitherto unknown *Kaḷachchūri* principality. The third inscription helps us greatly to understand the valuable history. Another two inscriptions belong to the time of the Śilāhāra king Aparājitaśrī of 993 A.D. and state that the kingdom of Aparājita extended as far as *Lāta* or southern Gujrat. The Brahmanavādā plates of Bāla Mūlarāja II (1175 A.D.) help us to fix the year of the death of his father more accurately than was hitherto possible. The last of them belongs to Damji Rao II of the Gaekwad family and is dated in V.S. 1792.

Publications of this kind are very welcome as they facilitate the important work of reconstructing the history of the country in a more complete and reliable manner than has hitherto been possible.

H. L. J.

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दंडनीति, which is described as Criminal Jurisprudence, is only a chapter in the division नीतिमंजरी of the big work called धर्मकल्पलता. It was written in Sanskrit by केशवपंडित, who died probably in 1695 or a year or two later, that is, nearly 250 years ago. He lived for some time at Raigarh with Shiwaji and visited Benares sometime before the year 1674 of the Christian era to secure the sanction of Benares Pandits and especially Gayabhatta to the coronation of Shiwaji. This chapter called दंडनीति contains 575 shlokas,

many of which are extracts from other writers, ancient and modern, as stated in the passage मन्वादिशास्त्राणि विचार्य सम्यक् तथा निबंधांश्च मितक्षरादीन्. Nearly sixty authorities are referred to in this chapter. The publication of this work by the भारत इतिहास संशोधक मंडल, Poona, in these days of scarcity of paper, is very commendable. The book is edited by Mr. V. S. Bendrey from whose Introduction and Appendix extending over 72 pages, we get valuable information about the author and the literary, religious and political activities during the time of Shiwaji. दंडनीति states the various punishments for the various offences. Whether some actions should be regarded as offences or not in a point upon which different peoples take different views. For example, it is stated in shloka 167 of this work, which is an extract from बृहस्पति, that "a person who steals a cow, should be drowned in water after his nose is cut and after he is bound. गोहर्तुर्नासिकां छित्त्वा बद्ध्वाभसि निमज्जयेत् । But this view is not now taken even in Hindu states. There is a similar diversity of opinion as regards the nature of the punishments to be inflicted for actions regarded as offences, as seen from the numerous references to corporal punishments and mutilations stated in this work, none of which is now awarded by the courts excepting the punishment of flogging. *This work would prove very useful to those who desire to make a comparative study of these aspects of criminal law, as all the texts bearing on the point of offences and punishments according to Hindu Law are found collected in this book.* Those who have studied the Indian Penal Code only are not aware of the punishments awarded by the courts to the offenders in pre-British regime. They would get some idea about this from this book.

The reform of German Criminal Law took place because the persons, whose duty it was to execute the orders of the judges, themselves complained about the extreme severity of the sentences, e.g., the wheel sentence imposed in accordance with old rules, and wanted the law on the point to be changed. Similarly, as a matter of fact, all the punishments mentioned in दंडनीति or the earlier works were not inflicted with all their severity upon persons guilty of the various offences, and we expect the editor to deal with the punishments, which became either absolute, or which became rare and were substituted by other punishments, in the work, "Indian Criminal Jurisprudence in Ancient and Historic Times", which we expect to be published as early as possible.

The utility of the book would have been enhanced, had the editor favoured us with an English translation of this work, and a subject index.



## AN ANCIENT DYNASTY OF KHANDESH

BY PROF. V. V. MIRASHI, M.A., Nagpur

NEARLY twenty-five years ago Dr. R. C. Majumdar edited two copper-plate grants which Dr. D. R. Bhandarkar had obtained from a Brāhmaṇa in the Indore State.<sup>1</sup> One of these, which was made by the *Mahārāja Svāmidāsa* in the year 67, registers the gift of a field in the village Dakṣhiṇa Valmika-tallavātaka which lay in the Nagarikā-pathaka. The other, which was made by the *Mahārāja Bhuluṇḍa* in the year 107, records the donation of a field on the boundary of a village the name of which was read by Dr. Majumdar as Rulladana, but appears to be correctly Ulladana<sup>2</sup>. Both these grants plainly belonged to the same dynasty; for they were both issued from the same place Valkha.<sup>3</sup> Besides, their characters, phraseology and mode of dating<sup>4</sup> are the same. The dynasty has not been named in the grants and has not so far been known from any other source. It is however certain that it was a feudatory family, for both *Mahārāja Svāmidāsa* and *Mahārāja Bhuluṇḍa* describe themselves as *Parama-bhaṭṭāraka-pād-ānudhyāta*, i.e., 'meditating on the feet of the Great Lord' which indicates their feudatory status. Dr. Majumdar could not suggest any identification of Valkha which was apparently the capital of the dynasty. His identifications of Nagarikā with the ancient city of Nāgara which lies 75 miles from the borders of the Indore State and of Tallavātaka either with Adalwār, 37 miles north-east from Nāgara or with Talaorā, about 50 miles north-east from the same city, cannot be regarded as quite certain in the absence of definite information about the provenance of these grants.

Dr. Majumdar referred the dates of these grants to the Gupta era on palaeographic grounds; for, according to him their characters resemble those of the Sāñchi inscription of Chandragupta II. Though the grants mention the year, month and fortnight, they do not give further details such as the week-day or the *nakshatra* and therefore their dates do not admit of

<sup>1</sup> *Ep. Ind.*, Vol. XV, p. 286.

<sup>2</sup> The letter is hook-shaped with the curve turned to the right. In *ru* the sign of the medial *u* should have been a curve turned downwards and added to the vertical of the southern form of *r*.

<sup>3</sup> The reading in both the grants is *Valkhā*, the final consonant *t* being incorrectly omitted as in several other cases in ancient grants. See, e.g., *Narattaṅgavāri-sthānā*, *Ep. Ind.*, Vol. XXII, p. 171; *Nandivardhanā*, *ibid.*, Vol. XXVI, p. 159.

<sup>4</sup> Both the grants are recorded in box-headed characters, the boxes at the top of letters being scooped out hollow. They use the word *varsha* instead of the usual *samvatsara* to denote the year of registration. The formal part of the grants is also almost exactly the same.

verification. If Dr. Majumdar's view is accepted, Svāmidāsa's grant would be one of the earliest dated records of the Gupta era. But there are certain difficulties in accepting this view. If Svāmidāsa and Bhulunḍa were the feudatories of the Guptas, it looks strange that, unlike other feudatories<sup>5</sup> they do not name their suzerain. Besides, if these grants were originally found in the Indore State, we shall have to suppose that the rule of the Guptas was well established in Malwa as early as G. E. 67 (A.D. 386), whereas we know that the Western Kshatrapas were supreme in Kathiawad and Malwa till A.D. 388 at least.<sup>6</sup> The earliest certain Gupta date from Malwa is the year 82 of the Udayagiri cave inscription of the reign of Chandragupta II. It would therefore seem that these dates refer to some other era.

It is doubtful if these grants were originally found in the Indore State, or, for the matter of that, anywhere to the north of the Narmadā. From a statement recently published in the *Ep. Ind.*, Vol. XXIV, p. 52, we learn that these grants together with another (*viz.*, the so-called Indore grant of the Vākātaka Pravarasena II) were in the possession of Pandit Vaman Shastri Islampurkar, from whom they were obtained by Dr. D. R. Bhandarkar. The pandit was engaged in collecting old manuscripts and ancient historical records in different parts of the country.<sup>7</sup> These two grants, like the grant of Pravarasena II, may therefore have been found outside the Indore State. Unfortunately their provenance has not been recorded, but there is one circumstance which affords a clue. It has not yet been noticed that these grants bear a very close resemblance to a copper-plate grant<sup>8</sup> found at Śirpur in the West Khandesh District of the Bombay Presidency. This latter grant is fragmentary, for a small piece of the copper-plate about 1" broad, has been broken off the whole way down on the proper right side. The extant portion of the inscription shows that it registers a grant, by *Mahārāja* Rudradāsa, of a field on the western boundary of the village Vikatṭānaka which adjoined another village (or field) named Kolahatṭaka. The grant is dated in the year 117 of an unspecified era.<sup>9</sup> That it belongs to the same dynasty

<sup>5</sup> See, e.g., that the Sanakānika *Mahārāja* describes himself as meditating on the feet of Chandragupta II in his Udayagiri inscription, dated G. E. 82. *C.I.I.*, Vol. III, p. 25.

<sup>6</sup> The coins of Rudrasimha, the last of the Western Kshatrapas are dated Śaka 310 or 31x (A.D. 388 or 388 + x). See Rapson, *Coins of the Andhras*, etc., pp. 92 ff.

<sup>7</sup> See his introduction to the *Navasāhasāṅkcharita* (Bombay Sanskrit Series).

<sup>8</sup> Edited by Pandit Bhagwanlal Indraji, *Ind. Ant.*, Vol. XVI, pp. 98 ff.

<sup>9</sup> Pandit Bhagwanlal read the date as 118, but was not certain about the era to which it refers. The last symbol denoting the year is exactly similar to that in the date of the *Ābhaya* plates of Śaṅkaragana, which is also expressed in words. See l. 34 of the facsimile facing p. 297, *Ep. Ind.*, Vol. IX.

as the other two grants edited by Dr. Majumdar appears clear from the following common features:—

(1) The name of the *Mahārāja* Rudradāsa who made the grant resembles that of the *Mahārāja* Svāmidāsa of one of the Indore grants. Again, like Svāmidāsa and Bhuluṇḍa, Rudradāsa describes himself as *Parama-bhaṭṭāraka-pād-ānudhyāta*.

(2) The characters and phraseology of the Śirpur grant are strikingly similar to those of the Indore grants.

(3) The date is also similarly worded and the year is introduced with the word *varsha* as in the other two Indore grants.

(4) The place of issue is not named in the extant portion of the Śirpur grant, but it must have been mentioned in the beginning of the first line, where two or three letters have now been lost owing to the breaking off of a piece of the plate on the proper right. It is noteworthy that the two dots which followed the name of the place of issue as a sign of punctuation are still seen in the beginning of the first line as on the Indore plate of Bhuluṇḍa. The signature of *Mahārāja* Svāmidāsa, which must have occurred in the margin on the proper right as in the other two grants, is now lost.

These similarities leave no doubt that all the three grants belong to the same dynasty. The grant of Rudradāsa is known to have been found in the possession of one Motiram Patil of Śirpur<sup>10</sup> and must in all probability have belonged to Khandesh. The so-called Indore grants also may likewise have been found somewhere in Khandesh. With this clue we can satisfactorily identify many of the places mentioned in the three grants. The capital Valkha from which at least two of these grants were issued, is probably identical with Vāghli, about 6 miles north by east of Chālisgaon in East Khandesh, on the Bombay-Bhusawal line of the G. I. P. Railway. It is an old place as it contains some ancient temples and old Sanskrit inscriptions which have now become illegible.<sup>11</sup> Nagarikā, the headquarters of the territorial division (pathaka) mentioned in the grant of Svāmidāsa may be identical with Nagar Devlā about 10 miles north-east of Vāghli, which also contains an old 'Hemāḍpanti' temple of Mahādeva.<sup>12</sup> Tallavāṭaka may be Talvāḍ khurd, about 15 miles north by west of Nagar Devlā. Ulladana mentioned

<sup>10</sup> *Ind. Ant.*, Vol. XVI, p. 98.

<sup>11</sup> See *Khandesh District Gazetteer*, p. 478. One of these inscriptions in three parts, edited by Dr. Kielhorn (*Ep. Ind.*, Vol. II, pp. 221 ff.) shows that Vāghli became afterwards the capital of a feudatory royal family named Maurya which originally hailed from Valabhī in Kathiawad and later on owed allegiance to the Yādavas of Khandesh.

<sup>12</sup> *Ibid.*, p. 457.



in the other Indore grant of Bhulūṇḍa is probably identical with Udhli<sup>13</sup> on the Tāpti, about 9 miles east of Bhusawal, in East Khandesh. I have not been able to locate satisfactorily the places mentioned in the Śirpur plate, except Vikatṭānaka which may be Viṭnerā, about 20 miles south by east of Śirpur. But the identification of the other localities leaves no doubt that the dynasty was ruling in Khandesh, probably from Vāghli in the neighbourhood of Chālisgaon.

We thus get the following three names of the kings of this dynasty :—

*Mahārāja Svāmidāsa* (year 67)

⋮

*Mahārāja Bhulūṇḍa* (year 107)

|

*Mahārāja Rudradāsa* (year 117)

As these grants do not mention any royal genealogy, the relation of these princes *inter se* is not known. As stated before, these princes acknowledged the suzerainty of some other power not specified in their grants. The dates of their grants must therefore be referred to the era founded by this power. Now these dates cannot be referred to the Gupta era, for no certain dates of that era have been found to the south of the Narmadā except in the solitary instance of the Āraṅg plate<sup>14</sup> of Bhīmasena from Chhattisgarh. In any case Gupta power did not penetrate to Khandesh as early as the end of the fourth century A.D.<sup>15</sup> The use of the word *varsha* in connection with these dates may be taken to point to the Śaka era; but that era is out of question here as the characters of the grant are far more developed as already noticed by Pandit Bhagwanlal and Dr. Majumdar. The only other era to which these dates can be referred is the so-called Kalachuri-Chedi era which, as I have shown elsewhere,<sup>16</sup> was founded by the Ābhīra king Īśvarasena, in A.D. 249. Khandesh was the stronghold of the Ābhīras. Even now the Ābhīras or Ahirs predominate in that district. These princes who were evidently ruling in Khandesh were probably feudatories of the Ābhīras whose era they have used in their grants. The years 67, 107 and 117 mentioned in

<sup>13</sup> The description in the record that the field was granted together with the surrounding *kachchha* (bank) suits Udhli very well as it is situated on the bank of the Tāpti.

<sup>14</sup> For the correct date of this record, see my article in *Ep. Ind.*, Vol. XXVI, p. 227 ff. The Betul plates of the Parivrajaka king Saṅkshobha dated G.E. 199 were also found to the south of the Narmadā, but their contents show that originally belonged to the Jabulpur District. See also Hiralal's *Inscriptions in C.P. and Berar* (Second ed.), p. 87.

<sup>15</sup> The identification of Eraṇḍapalli mentioned in the Allahabad stone pillar inscription of Samudragupta, with Eranḍol in Khandesh proposed by Fleet is now held to be untenable.

<sup>16</sup> My article on this era will soon be published in the *Annals of the Bhandarkar Institute*.

these records therefore correspond to A.D. 316-17, 356-57 and 366-67 respectively.<sup>17</sup> Except for the date of the Nasik cave inscription of the Ābhīra Īśvarasena, these are the earliest dates of that era.

No copper-plate inscriptions of the successors of Rudradāsa have been discovered, but in an inscription in cave XVII at Ajanṭā we find some similar names ending in *dāsa* which may therefore have belonged to the same dynasty. This inscription has lost a considerable portion on the left. It was first edited by Dr. Bhau Daji in the *Journal of the Bombay Branch of the Royal Asiatic Society*, Vol. VII, pp. 59 ff.; then by Pandit Bhagwanlal Indrajī in the *Inscriptions from the Cave Temples of Western India*, pp. 73 ff. and finally, by Dr. Bühler in the *Archæological Survey of Western India*, Vol. IV, pp. 129 ff. Bühler's transcript is accompanied by a facsimile prepared from an inked estampage taken by Bhagwanlal, but it is considerably worked up by hand. A correct edition of the record together with a purely mechanical facsimile is still a desideratum. From an excellent estampage which I owe to the kindness of Dr. N. P. Chakravarti, Government Epigraphist for India, I was able to correct some of Dr. Bühler's readings. The inscription mentions the following princes:—

1. (Name lost)
2. Dhṛitarāshṭra
3. Harisāmba
4. Śaurisāmba
5. Upendragupta
6. Kācha I
7. Bhikshudāsa
8. Nīladāsa
9. Kācha II
10. Kṛishṇadāsa

11. (name lost)

Ravisāmba

The two sons of Kṛishṇadāsa are compared to Pradyumna and Sāmba. The name of the elder son is lost. That of the younger one ended in *sāmba* and may have been Ravisāmba as read by Bhagwanlal and Bühler.<sup>18</sup> The

<sup>17</sup> The use of the word *varsha* to signify the years of this era seems to be in imitation of the Śaka era which was previously current in Mahārāshṭra. Again, the use of Sanskrit in these grants need not cause any surprise as the revival of the classical language had already begun in Mahārāshṭra in the third century A.D. The Nasik inscription of the Ābhīra Īśvarasena is written in almost correct Sanskrit.

<sup>18</sup> The first *akshara* does not appear exactly like *ra*.

two brothers conquered Āsmaka and other countries and lived happily with increasing (fraternal) love and fame.<sup>19</sup> After some time Ravisāmba died prematurely. His elder brother, being overwhelmed with sorrow and convinced of the transitoriness of the world,<sup>20</sup> began to lead a pious life. He waited upon saintly persons known for their learning, charity, compassion and other virtues and imitated in his actions righteous kings of the past. He bestowed munificent gifts on supplicants and adorned the whole world with his fame. He caused *stūpas* and *vihārās* to be erected and got the excellent monolith *maṇḍapa* together with a *chaitya* of the Buddha to be excavated in the form of the present cave XVII at Ajantā, while Harisheṇa, the moon among princes (*kshit-īndra-chandra*) was protecting the earth. He also provided it with a water-cistern and caused a noble *gandha-kuṭi* to be excavated to the west of it in another part of the hill.<sup>21</sup>

The foregoing account of the inscription in Ajantā Cave XVII shows that the last of these kings was a contemporary and perhaps a feudatory of the Vākāṭaka king Harisheṇa who flourished from *circa* A.D. 475 to A.D. 500.<sup>22</sup> He was preceded by ten other princes. The first of these may therefore be placed in *circa* A.D. 275-300. Some of these princes may therefore have been contemporaries of Svāmīdāsa, Bhulūṇḍa and Rudradāsa whose dates range from A.D. 316 to A.D. 366, but the latter names do not occur anywhere in the list of the Ajantā inscription. We can reconcile the known data by supposing either that these kings were collaterals of the princes mentioned in the Ajantā inscription or that they belonged to a different branch and ruled over a different part of Khandesh.

<sup>19</sup> In line 9 Bhagwanlal read *ekādhipatya-pratham-āvatāraṁ dadhre dvitīyo Ravisāmba-saṁjñām*, which Bühler changed into *ekādhipatyaṁ prathamō babhāra* which conveys the meaning that the elder brother became Emperor. The correct reading, however, is *Dharadhipākhyām prathamō babhāra* which means that the elder brother succeeded to the throne.

<sup>20</sup> In line 17 Dr. Bhau Daji had correctly read *anītya-saṁjñā-sachīvaḥ tataḥ paraṁ vyavīri-dhat-puṇya-mahā-mahtruhaṁ*, but took *anītya* to be the name of a minister. Bhagwanlal and Bühler read *Achīmtya-* and *Achītya-* respectively and took these to be the name of the minister. The correct reading is undoubtedly *anītya-* and the sense evidently is that the prince was all the while conscious of the transitoriness of life.

<sup>21</sup> This is evidently the so-called Chaitya cave No. XIX which actually lies to the west of Cave XVII. The proper name of such caves is *gandhakuṭi*. Incidentally this furnishes a definite date for the beautifully sculptured Cave XIX, which had long been missed; for Bhagwanlal thought that the reference was to the small Cave XVIII from which, he thought, the image had been removed, while Bühler thought that the *gandhakuṭi* lay to the west of the Buddha's (?) body.

<sup>22</sup> See the *Vākāṭaka Inscription in Cave XVI at Ajantā* edited by me in the Hyderabad Archaeological Series, p. 9.

These kings were at first feudatories of the Ābhīras whose empire, judging from the use of their era, seems to have extended from Koṅkaṇ in the west, to Khandesh in the east and from the Narmadā in the north to the Kṛishṇā in the south. According to the Purāṇas ten Ābhīra kings ruled for 67 years. This however gives an incredibly small average of 6·7 years per reign. Perhaps the expression *sapta-shashṭi śatān=īha* stating the period of Ābhīra rule, which occurs in a MS. of the *Vāyupurāṇa*<sup>23</sup> is a mistake for *sapta shashṭim śatān=ch=eha*.<sup>24</sup> If this is correct, the Ābhīra rule may have lasted for 167 years. The unnamed Great Lords on whose feat Svāmīdāsa, Bhulūṇḍa and Rudradāsa meditated may thus have belonged to the Ābhīra dynasty. After the fall of the Ābhīras, these princes seem to have transferred their allegiance to the Vākāṭakas who were their powerful neighbours to the east. Harishēṇa, the last of the Vākāṭakas, is mentioned in the Ājanṭā inscription as the contemporary ruling king.

From the mention of Aśmaka in line 10 of the Ājanṭā inscription Pandit Bhagwanlal inferred that these kings were ruling over Aśmaka.<sup>25</sup> But the correct reading of the line is . . *m-Aśmak = ādikān | deśāns = cha (teshām) = abhibhūya bhūyasā rarājatus = chandra-divākarāv = iva* 'The two (sons of Kṛishṇadāsa), having overcome Aśmaka and other countries, shone mostly like the sun and the moon.' Aśmaka was thus one of the countries raided by these princes; it was not their home-land. In fact Aśmaka was not the ancient name of Khandesh. From the *Suttanipāta* we learn that the Aśmakas had a settlement on the Godāvarī.<sup>26</sup> The Pāṇḍaraṅgapallī plates of about the same age as the Ājanṭā inscription state that Mānāṅka, the founder of the Rāshṭrakūṭa dynasty had conquered Vidarbha and Aśmaka which appear to have been contiguous countries. As I have shown elsewhere,<sup>27</sup> Vidarbha in that inscription refers to the kingdom of the Vatsagulma branch of the Vākāṭakas. Aśmaka seems, therefore, to have comprised the Aurangabad and perhaps the Ahamdnagar district. The Ājanṭā or Sātmālā range separated Aśmaka from Khandesh as it divided Vidarbha into Northern and Southern Vidarbha. Another Ājanṭā inscription in Cave XXVI<sup>28</sup> which belongs to a slightly later date refers to a minister of the kings of Aśmaka in whose honour the cave was excavated. The country of Aśmaka thus

<sup>23</sup> Pargiter, *Dynasties of the Kali Age*, p. 46, n. 37.

<sup>24</sup> For a similar expression see *pañcha-varsha-śatān = īha* which Pargiter takes as 'probably meaning 105 years'.

<sup>25</sup> *Inscriptions from the Cave Temples*, etc., p. 73; *Ind. Ant.*, Vol. XVI, p. 99.

<sup>26</sup> *Suttanipāta*, p. 977.

<sup>27</sup> *Annals of the Bhandarkar Institute*, Vol. XXV, p. 44.

<sup>28</sup> See *Arch. Surv. of West. India*, Vol. IV, pp. 132 ff.

lay to the south of Ajanṭā and was different from Khandesh which lay to the north of it.

The ancient name of Khandesh seems to have been Ṛishika. No satisfactory identification of this latter country has yet been suggested. Varāhamihira places Ṛishika in the southern division. In the *Rāmāyaṇa* Ṛishika is grouped with Vidarbha and Māhishaka among countries of the south which Sugrīva asked monkeys to visit in search of Sītā.<sup>29</sup> In the *Mahābhārata* also, Ṛishika is coupled with Vidarbha.<sup>30</sup> Another verse of the *Mahābhārata* connects Ṛishika with the western Anūpa country.<sup>31</sup> Elsewhere the epic couples Ṛishika with Āsmaka while mentioning the countries conquered by Karṇa.<sup>32</sup> In the *Daśakumāracharita* the ruler of Ṛishika is said to have been, like that of Āsmaka, a feudatory of the king of Vidarbha.<sup>33</sup> The Nasik cave inscription of Puṣyamāvi mentions Asika (Sanskrit, Ṛishika) together with Asaka (Sanskrit, Āsmaka) among the countries which were under the rule of his father Gautamīputra Sātakarṇi.<sup>34</sup> All these references plainly show that Ṛishika was contiguous to Āsmaka, Vidarbha and Anūpa (or Māhishaka).<sup>35</sup> The only country which answers to this geographical position is Khandesh, for it is bounded on the east by Berar (ancient Vidarbha), on the north by the Nemād district of the Central Provinces and parts of the Indore State (ancient Anūpa or Māhishaka) and on the south by the Aurangabad District (ancient Āsmaka).

The rulers of Ṛishika, Vidarbha and Āsmaka were thus holding the country round Ajanṭā. All the three dynasties have left us precious monuments in the shape of some magnificent caves at Ajanṭā.<sup>36</sup>

<sup>29</sup> *Rāmāyaṇa* (Nirṇayasāgar ed.), Kishkindhākāṇḍa, canto 41, v. 10.

<sup>30</sup> *Mahābhārata* (Chitrāśālā Press ed.), Bhīṣmaparvan, adhyāya 9, v. 64.

<sup>31</sup> *Ibid.*, Udyogaparvan, adhyāya 4, vv. 18-19.

<sup>32</sup> *Ibid.*, Karṇaparvan, adhyāya 8, v. 20.

<sup>33</sup> *Daśakumāracharita* (Bom. Sansk. Series), p. 138.

<sup>34</sup> *Ep. Ind.*, Vol. VIII, p. 60 ff.

<sup>35</sup> Māhishaka was probably the country of which the capital was Māhishmati. It is well known that this city was also the capital of the Anūpa country. See *Raghuvamśa*, Canto VI, vv. 37 and 43.

<sup>36</sup> Cave XVI which Messrs. Fergusson and Burgess considered to be 'in some respects most elegant' was caused to be excavated by a minister of the king Harishepa who belonged to the Vatsagulma branch of the Vākātaka dynasty. Cave XVII which now has more paintings than any other and the *gandhakuṭi* cave XIX which is most elaborately sculptured were caused to be made by a king of Ṛishika as shown in this article. Finally, Cave XXVI which also is an elaborately sculptured *gandhakuṭi* was executed by a Bhikshu in honour of his friend Bhavvirāja who was a minister of an Āsmaka king.

## GOND MARRIAGE\*

BY M. P. BURADKAR, M.A.

ALL human societies look upon the intercourse of sexes not simply as a matter of individual choice or biological necessity, but also as a social or ethical matter of great importance.<sup>1</sup> Every community regards certain forms of marriage as socially good and condemns others as vicious. The ideal type cannot always be realised and everywhere there are weaklings who fall short of ethical standard and also some who do not conform to the standard set by society. Naturally, therefore, in every society there are different forms of marriage, some of which are regarded as superior to the others.

*Adult Marriage.*—Adult marriage is the rule among the Gonds in all localities. A girl is married when she is sufficiently grown up to make her own choice and she is generally allowed a good deal of latitude in the selection of her husband.

The Gonds of the plains who live in contact with the Hindus, especially in the urban areas, however, have adopted the practice of marrying their daughters at tender ages and among them child marriage tends to become popular, because it is looked upon as a badge of social distinction. But even among them in the remote tracts adult marriage is the rule.

Among the Hill Marias prepuberty marriage is strictly forbidden. They look upon it as an utterly abhorrent custom. A few Bison-horn Marias are beginning to ape their Hindu neighbours in this as in other matters, but even among them, "probably only three in a hundred Bison-horn marriages are child marriages".<sup>2</sup> Among the Marias of Chanda district marriage of a girl takes place after she is mature.

*Forms of Marriage.*—Marriage among the Gonds considered from the point of view of relationship that subsists between the parties to the marriage may be classified thus:—

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\* The article is devoted to the study of cross-cousin, grandparent-grandchild, levirate and sororal forms of marriage. The author made his original researches in the Western Sātpura region and the Nagpur plains.

<sup>1</sup> Lowie, R. H., *An Introduction to Cultural Anthropology*, p. 231.

<sup>2</sup> Grigson, W. V., *The Maria Gonds of Bastar*, pp. 248, 250. Russell and Hiralal, *Tribes and Castes of the Central Provinces*, Vol. III, p. 73.

## A. Marriage between kin.

## (i) Cross-cousin marriage.

(a) Symmetrical—with one's maternal uncle's daughter.

(b) Asymmetrical—with one's paternal aunt's daughter.

## (ii) Grandparent-grandchild marriage.

(a) Maternal grandfather (*Akkō*) and grand-daughter (*Tang Miār*).(b) Paternal grandmother (*Āji*) and grandson (*Tang Marri*).

## B. Marriage between affines.

(iii) Levirate marriage—with one's elder brother's widow.

(iv) Sororal marriage—with one's wife's younger sister.

Different forms of marriage looked at from the point of view of the method of acquiring one's mate are listed below:—

(i) Regular marriage (*Marmi* or *Pendul*)—in which a bride-price is paid and the usual ceremonies are gone through.(ii) Marriage by service (*Lāmsaṇā Mārmī*)—in which a man has to serve for his bride for a specified period at his prospective father-in-law's place.(iii) Marriage by exchange (*Kōtāvaldā* or *Ātā-Sātā*)—in which a man marries a woman and gives his sister in marriage to his wife's brother.(iv) Marriage by capture<sup>3</sup> (*Poyse Ottur*)—in which a woman is captured and is married forcibly by her captor.

To the above list may be added a few more forms of marriage which though approved, are regarded as irregular:—

(i) Marriage by elopement (*Aghmirtur* or *Armirtur*)—in which an unmarried girl or a wife elopes with another man with whom she is married afterwards.(ii) Marriage by intrusion (*Paithu* or *Odiyattur*)—in which a woman, widow or unmarried, forces a man to accept her as his wife.(iii) *Ottur* marriage—in which an unmarried pregnant woman goes to live with the man responsible for pregnancy without any ceremony.

<sup>3</sup> This form of marriage which was in vogue in the past has now disappeared.

- (iv) *Ahene-hattur* ('Thus went') marriage—in which a child is born before her marriage (even ottur) and the woman with her child goes to the house of the putative father of the child.

These marriages are common among the Maria Gonds of Bastar and the above nomenclatures are prevalent among them.

*Other forms.*—Marriage among the Gonds may be monogamous or polygynous as according to the number of women a man marries and live with at a time. Again the ceremonies connected with the marriage of virgin and widow being substantially different the marriage of a virgin is distinguished from that of a widow.

*Cross-Cousin Marriage.*—Marriage of cross-cousins is much favoured and widespread among all sections of the Gond community. It prevails among them in both of its forms: symmetrical and asymmetrical, the former being more popular among those who inhabit the plains and have come under the cultural influence of the Hindus.

*Potential Mates.*—That cross-cousins are potential mates of each other is evident from the kinship terms they use for each other's children. A man uses the terms *Marri* (son) and *Miār* (daughter) for the children of his female cross-cousin (*sangō* or *yeni*) and correspondingly she uses the same terms for his children.

The preference shown to cross-cousin marriage is well illustrated in a Gond song recorded by Hislop. When Lingo the divine prophet of the Gonds visited Rikad Gawadi he introduced himself to his seven daughters in the following words:

" . . . thy father is my uncle (*māmāl*) and thy mother (*awāl*) is my aunt (*āiō*)

and when he was about to leave the place the seven sisters said,

"Hear O, brother, our word. Thou art son to uncle, and we are daughters to aunt.

There is good relationship between you and us; how can you leave us?

We will come with you; therefore, don't say No".<sup>4</sup>

The songs relate that these 'seven sisters' accompanied Lingo and were subsequently married to his four brothers. The incident presents before us the typical form of cross-cousin marriage in which a man's mother's brother is also his father's sister's husband.

<sup>4</sup> Rev. S. Hislop, *Aboriginal Tribes of the C.P.s.*, p. 24.



*Prescriptive Right over Female Cross-Cousin.*—Among the Gonds a man has a prescriptive right on his mother's brother's and his father's sister's daughter. Among the Marias "such marriages are considered the most seemly, both because the family which has given a daughter to another family in marriage in one generation should have this obligation repaid by getting her daughter back as a wife for a son of the next generation, and because such family arrangements obviate the necessity of paying the much heavier bride-price required for getting a bride from a new and unrelated family".<sup>5</sup>

In Mandla, a man would claim his sister's daughter for his son and sometimes even cousins and considers that he has a legitimate grievance if the girl is married to some one else. "Frequently, if he has reason to apprehend this he invites the girl to his house for some ceremony for festival and there marries her to his son without the consent of her parents."<sup>6</sup> The circumstances have since much changed and this practice has almost disappeared. In Bastar, again when a girl has grown up and no suitable match can be found for her, her parents may ask her maternal uncle's or paternal aunt's son to seize her and take her away. He and his friends thereupon lie in wait near her home and carry her off and her parents afterwards proceed to his house to console their daughter.<sup>7</sup>

In other localities the prescriptive right of a cross-cousin is recognised by the acceptance of a smaller bride-price than would be demanded of a person in no way related.

*Dudh Lautawa or Gudapal.*—The cross-cousin marriage in which a daughter of a sister is married to a son of a brother is known among the Gonds of the Satpura region as *Dudh Lautawa* (bringing back the milk). A man thinks that he has a right to his sister's daughter for his son on the ground that his family has given a girl to her husband's family in return of which he should get one for his son. By securing his sister's daughter for his son he brings back the 'milk' which his family had given to the family of his sister's husband, the term 'milk' being symbolic of kinswoman. The term 'Dudh Lautawa' is also applied to the marriage of a sister's son with her brother's daughter.

<sup>5</sup> Grigson, W. V., *op. cit.*, p. 247. (See also *Census Report of the C.P. and Berar*, 1911, Part I, pp. 134-35. "Among the Maria Gonds the claims of a man to his father's sister's daughter can be enforced by the tribal Panchayat or in the alternative compensation is given.")

<sup>6</sup> Russell and Hiralal, *op. cit.*, Vol. III, pp. 71-72.

<sup>7</sup> *Ibid.* (See also Grigson, *op. cit.*, p. 247. "Moreover it is a reflection on parents if, when a girl is mature, no marriage is arranged for her; in such cases it is recognised right of the parents to ask either the mother's brother's son or the father's sister's son to carry her off and make her his wife, even though he be already married to some other woman.")

The cross-cousin marriage among the Marias of Bastar in which a girl is married to her maternal uncle's son is known as Gudapal (tribe milk). The name "has been extended to cover marriages between a girl and her father's sister's son and a son and his mother's brother's daughter, which merely means the borrowing of a wife from the same family for two successive generations".<sup>8</sup>

In some other localities, e.g., in the Nagpur plains and among the Marias in Chanda district the marriage is simply described as *Yenā Sangō Marmi* and *Marandāri-i-Urā Marmi*, that is 'cross-cousin marriage' respectively.

*Compensation.*—When a sister's daughter is married to anyone else than her maternal uncle's son, the maternal uncle has a right to claim 'what is known as milk money', a sum of about Rs. 5 in compensation for the loss of the girl as a wife for his son. Such 'milk money' can also be demanded by a sister of her brother if he refuses to marry his daughter to her son if she so desires.<sup>9</sup> This custom is, however, fast disappearing and it has disappeared from among the Gonds of the Nagpur plains. Relics of this custom are, however, still found even among the advanced Gonds in what is known as *Māmāwāri*, i.e., conventional gift for the maternal uncle, when a daughter of his sister is married to anyone other than one of his sons.

Grigson mentions that "when a Bison-horn Maria girl marries a man other than her mother's brother's son, the latter, unless he has forfeited his prescriptive right to her by previously marrying another girl, is entitled to compensation from her husband, usually Rs. 5". This custom does not obtain among the Hill Marias to whom the free choice of the youth and girl is far more important.<sup>10</sup>

Among the Marias of the Garchiroli tahsil of Chanda district, the custom of demanding compensation by a maternal uncle still prevails. The amount of compensation which does not usually exceed Rs. 5 is known as *Gudā Mōla*.

*Symmetrical form is Predominant.*—The symmetrical form of cross-cousin marriage is predominant among the Gonds inhabiting the Nagpur plains and Berar where they have been living under the cultural influence of the Hindus for a long time. Marriage of a man with his father's sister's daughter among them is fast disappearing. This is because of the fact that their exogamous rules are gradually being modified by the contact of the Hindu castes who prohibit such a union. But in the backward localities

<sup>8</sup> Grigson, *op. cit.*, p. 247.

<sup>9</sup> Russell and Hiralal, *op. cit.*, Vol. III, p. 71.

<sup>10</sup> Grigson, *op. cit.*, p. 147.

where this culture contact is slight cross-cousin marriage in both of its form still prevails.

*Cross-Cousin Marriage in India.*—The institution of cross-cousin marriage is not confined to the Gonds only. It prevails among other aborigines, e.g., the Tōdās, the Vedās, the Khārīās and others. It is also widely prevalent among the castes and tribes of South India, which are either wholly or partly of Dravidian origin.<sup>11</sup> Marriage with the daughter of mother's brother is a general custom in Malabar, Kochin, Travancore and in the Telugu-speaking country where it has a special name (*Menarikam*<sup>12</sup>).

The custom of marrying one's maternal uncle's daughter obtains also among a number of Hindu castes in the Central Provinces and Berar. It is found even among some of the sub-castes of Brahmans.

*Cross-Cousin Marriage out of India.*—Cross-cousin marriage has a very interesting distribution. It is reported from every grand division of the globe. In West Australia and about Lake Eyre tribes prescribing marriage with a maternal uncle's daughter jostle with others which prohibit such union. The custom flourishes in several of the Melanesian islands, notably in Fiji, but is discountenanced in nearby Polynesian groups such as Samoa. It prevails in Farther India and also in Sumatra.

Nor is it lacking in Siberia; the Gilyak enjoins the union of a man with his mother's brother's daughter. It is relatively rare in America, the usages being reported only from the northern coast of British Columbia, from Central California and Nicaragua. The fact that in South America Chilka women have a single word for husband and father's sister's son suggests that they too once frequently mated with cross-cousins. This type of preferential mating is orthodox in parts of South and East Africa—among the Hottentot, Herero, Basuto and Makando.<sup>13</sup>

*Origin of the Cross-Cousin Marriage among the Gonds.*—The institution of cross-cousin marriage has been studied by eminent anthropologists in different localities and the conclusions arrived at by them suggest that "cross-cousin marriage is in all probability not a phenomenon that has evolved from a single cause but one that has independently arisen in several centres from diverse motives".<sup>14</sup>

<sup>11</sup> (1) Kallans, (2) Vallambans, (3) Komtis, (4) Nattamans, (5) Goundans, (6) Idaiyans, (7) Yerukalas and some others.

<sup>12</sup> Iyer, A. K., *Lectures on Ethnography*, p. 129. Frazer, J., *Totemism and Exogamy*, Vol. II, pp. 224-74.

<sup>13</sup> Lowie, R. H., *Primitive Society*, pp. 25-26.

<sup>14</sup> *Ibid.*, p. 29.

The origin of cross-cousin marriage among the Gonds is to be sought in the social condition the Gond community once passed through. There is strong evidence to believe that the Gond community was once dualistic. In a dualistic society children of a sister and of a brother would always belong to two different exogamous units so that the rule of exogamy would not come in the way of their union. In such a society, with prohibited degrees confined to the generations above and below one's own, the normal form of marriage, if within kingroup, would be cross-cousin, for the next of kin of the same generation whose marriage is not prohibited by the tribal law of exogamy would necessarily be cross-cousins.

A close observation of the Gond community discloses the fact that these people favour union between kin. This preference to unions of blood kin in the dualistic society led naturally to the rise of the cross-cousin marriage among the Gonds.<sup>15</sup>

*Influence of the Institution on the Gond Kinship.*—Cross-cousin marriage has influenced the Gond kinship to some extent. The identity of terms applied to mother's brother, father's sister's husband and wife's father, and so also the identity of terms applied to father's sister, mother's brother's wife and wife's mother, have resulted from the cross-cousin marriage. Cross-cousin marriage will explain why the mother's brother's son's or father's sister's son's (*Yena's*) wife is addressed as sister and the mother's brother's daughter's or father's sister's daughter's (*Sango's*) husband is addressed as brother. In this is also found the origin of the identical terms of address used by the husband and the wife for the same class of relatives of each other.

Cross-cousin marriage is also responsible for the combination of different relationships in and the same person.<sup>16</sup>

*Grandparent-Grandchild Marriage.*—As already pointed out neither the fundamental law of exogamy nor the prohibited degrees come in the way of union of certain grandparents and grandchildren. The provisions in this respect are of negative nature and the Gond society would not object to a person's marriage with his or her grandparent or grandchild provided he or she does so without breach of the established custom of the society. It should, however, be noted that the marriage between a real grandparent and

<sup>15</sup> Rivers, W. H. R., *Social Organisation*, p. 75.—"It is obvious of course that the explanation of marriage between blood relatives must be one that will account for general principle . . . (of cross-cousin marriage)."

<sup>16</sup> *Nagpur University Journal*, 1940, pp. 167-69. ('Kinship among the Gonds'—by the author).

grandchild is strictly interdicted; it takes place only between the classificatory ones.

*A Sharp Distinction between Maternal and Paternal Grandparents.*—Among the Gonds a sharp distinction is made between maternal and paternal grandparents. A marriage between grandfather and grand-daughter related to each other as *Akkō* (maternal grandfather) and *Tang Miār* (grand-daughter) is allowed provided that they are not lineally connected, while that between those related as *Tādō* (paternal grandfather) and *Tang Miār* is disallowed. Similarly a man may marry his grandmother related to him as *Aji* (paternal grandmother-widow of his paternal grandfather or sister of his maternal grandfather) but he is prohibited from marrying his *kākō*, that is his maternal grandmother's sister or paternal grandfather's sister.

*Grandson and Paternal Grandfather's Widow (Tang Marri and Aji).*—We come across marriages here and there, in which grandsons have married the widows of their paternal grandfathers. The practice is not widespread at present, but in the backward localities even at present a grandson may marry his widowed paternal grandmother in case disparity of age does not stand in the way. In case an old grandfather dies leaving young widows behind, grandsons are regarded to have a kind of prescriptive claim over those young widows. At any rate even at present a man's marriage with his classificatory paternal grandfather's widow is in practice and is in no way looked with disfavour among the Gonds.

A man's attitude towards his widowed paternal grandmother is similar to one he has towards his elder brother's widow whom, according to their established custom of junior levirate, he is eligible to marry. A woman too regards her son's or nephew's (husband's brother's son's) son or daughter as her *Sarandu* (husband's younger brother) and *Sarandāl* (husband's younger sister) respectively.

*Grandson and Maternal Grandfather's Sister (Tang Marri and Aji).*—A close observation of the Gond society reveals a good number of marriages that have taken place between a man and his maternal grandfather's sister (*Āji*), real or classificatory. These kin belong to two different clans and phratries and the prohibited degrees do not come in way of their union.

This form of marriage and the preceding one is identical in some respects. Father's father's wife and mother's father's sister are grouped under the same kinship term *viz.*, *Āji* and they always belong to the clan and phratry other than the one to which a man belongs. Where families are connected by cross-cousin marriages for two or three generations in succession mother's father's sister is married to paternal grandfather or his brother. Correspond-

dingly paternal grandfather's sister is married to maternal grandfather or his brother. A man is eligible to be husband of one set of women recognised by the kinship terminology of *Āji*, while he is debarred from marrying the other known as *kākō*.

*Maternal Grandfather and Grand-daughter (Akkō and Tang Miār).*—The relationship of *Akkō* and *Tang Miār* subsists between a man and his or his brother's daughter's daughter as well as between him and his sister's son's daughter. Union of these kin except when they are real grandparent and grand-daughter is allowed, but marriage between grandfather and grand-daughter closely related rarely takes place. Instances are, however, found in which a man has married his elder brother's daughter's daughter or elder sister's son's daughter. Marriages between classificatory grandparents and grandchildren, on the other hand, freely take place, if disparity of age does not exist.

A man jests with his grand-daughter to whom he is related as *Akkō* whether real or classificatory and calls her his wife in jest and their sayings and songs are full of jokes attendant on the relationship between two persons who are potential mates.

*Influence of the Institution on the Gond Kinship.*—The institution of grandparent-grandchild marriage has influenced the Gond system of kinship. A man regards his son's sons and all those coming in that category as his brothers because of their eligibility of being consorts of all those kinswomen whom he can marry. Similarly a woman regards her daughter's daughters and all those related to her in that way as her sisters because of their eligibility of marrying those kinsmen whose wife she herself can be.

A special relationship of maternal uncle and maternal aunt which a man or a woman traces to his or her elder sister's children in some localities results from a man's marriage with his maternal grandfather's sister and also from a man's marriage with his elder brother's daughter's daughter. In the former a man's sister's son marries his paternal aunt and comes to be related as his maternal uncle and his sister as maternal aunt, while in the latter a man's sister's daughter being married to his paternal uncle comes to be regarded as his *Kuchō* (maternal aunt or paternal uncle's wife) and her brother his maternal uncle.

*Junior Levirate.*—Widow marriage is permitted among the Gonds. A Gond widow usually marries one of her deceased husband's younger brothers. This is a well established and much appreciated custom among all sections and castes of the Gonds. In some localities a man is supposed to have

discharged his obligation to his deceased elder brother by marrying his widow and taking care of his children.

No special ceremony attaches to this kind of marriage. A group of relations and tribesmen assemble and in their presence the bridegroom gives the bride a new cloth and a pair of bangles and promises to maintain her and her children. Those who can afford to spend may give a feast to the tribesmen but such a feast is not essential. If a man is very poor he does nothing more than tying a necklace of black beads round the neck of the widow and she thus becomes his wife.

Among the Hill Marias widows usually go to their deceased husband's younger brother without any ceremony. Grigson states that he found no case in which any widow had married a man who was not her husband's younger brother or his parallel cousin.<sup>17</sup>

*Prescriptive Right and Compensation.*—Among the Dandami Marias a younger brother is supposed to have a prescriptive right to an elder brother's widow; and not only a widow is expected to marry her late husband's younger brother, but in case of her marrying any other man, the younger brother gets a compensation of Rs. 5 from the man who marries her. Sometimes the latter husband has to "compensate the dead husband's parents in part for the bride-price paid by them when their son married the widow, as well as compensating their younger son if any".<sup>18</sup> In the north-eastern part of Chanda district the custom of demanding compensation obtains among the Marias, the amount of it being usually about rupees five. In some part of Bastar, whenever, an outsider marries a widow he has to first go through a joint ceremony with the younger brother, by which the latter relinquishes his right in favour of the former.<sup>19</sup>

Russell mentions the following custom which was once prevalent among the Gonds of the Satpura region:

"In Mandala, if she (widow) will not wed the younger brother, on the eleventh day after the husband's death he puts the tarkhi or palm leaf ear-rings in her ears, and states that if she marries anybody else he will claim dawa-bunda or compensation."<sup>20</sup>

The custom though decayed, persists in a modified form and the practice of demanding compensation still continues among those who are less advanced.

<sup>17</sup> Grigson, W. V., *op. cit.*, pp. 260-61.

<sup>18</sup> *Ibid.*, pp. 247 and 261.

<sup>19</sup> Russell and Hiralal, *op. cit.*, Vol. III, pp. 80-81.

<sup>20</sup> *Ibid.*, 81.

In the Nagpur plains this practice of demanding and paying compensation has almost disappeared perhaps due to Hindu influence on the Gonds of this tract.

Among the Agarias, a blacksmith caste of the Gonds, a widow is expected to marry her late husband's younger brother, especially if he is a bachelor. In case of her marrying another man with his consent the new husband gives him a turban and shoulder cloth. Among the Parja tribe of Bastar, originally an offshoot of the Gonds a widow is practically compelled to marry her late husband's younger brother, if he has one and in case of her persistent refusal to do so she is turned out of the house by the parents.<sup>21</sup>

A few of the advanced Raj Gonds who are eager to raise themselves in social status have, however, discontinued this custom. Among some of the aristocratic families, even widow marriage is disallowed. But speaking in general, the practice is in vogue among the majority and this right of marrying the deceased elder brother's widow is scrupulously guarded even now among the backward Gonds.

*The Junior Sororate.*—The custom of junior sororate which allows a man to marry his wife's younger sister (Sarandāl) in his wife's life-time as well as after her death obtains freely among all sections of the Gonds. The practice is widespread and a man who wishes to marry more than one wife would usually prefer to marry two or more sisters, real or collateral, if possible. Whenever a man finds it difficult to get a suitable match for his daughter he prefers to give her in marriage to his son-in-law to whom his daughter older than the one to be married is married provided he is willing and capable to maintain her.

This custom of junnior sororate prevails widely even among those from among whom the custom of junior levirate is disappearing.

Among the Dandami Marias of Bastar State men with two or three wives are common. Generally only one of them is his regularly married wife and "the others will be either her younger sisters or parallel cousins or other women who have come into the husband's keeping of their own choice or after becoming pregnant as a result of a liaison with him". Among the Hill Marias whenever a wife is frigid or barren or in other way unsatisfactory, the husband seeks another wife, often getting her younger sister or her parallel cousin as compensation for her falling short of expectation.<sup>22</sup>

<sup>21</sup> Russell and Hiralal, *op. cit.*, Vol. II, p. 6 and Vol. IV, p. 376.

<sup>22</sup> G rigson, W. V., *op. cit.*, pp. 259 and 262.



Though a man is allowed to marry his wife's younger sister, both virgin and widow, he is on no account permitted to marry her elder sister, virgin or widow, either in her life-time or after her death. The elder sister of one's wife comes within the prohibited degrees and a man has to observe mutual avoidance in respect of her. But this prohibition is not applicable to her, when she happens to be his elder brother's wife (Ange)<sup>23</sup>.

*Levirate and Sororate are Correlative and Complementary.*—The customs of the junior levirate and junior sororate that obtain among all the sections of the Gonds are correlative and complementary. They are different aspects of one and the same social phenomenon. The levirate gives a man right to marry his elder brother's wife while the sororate grants a woman the right to marry her elder sister's husband, the difference being that while the sororate operates in the sister's life-time the levirate only after brother's death. Considered from the opposite angle, according to the junior levirate a woman is permitted or required to marry her deceased husband's younger brother while the junior sororate permits a man to marry his wife's younger sister. Thus the privilege enjoyed by a man in respect of his elder brother's wife is enjoyed by a woman in respect of her elder sister's husband ; or what is allowed according to the junior sororate to a man in respect of his wife's younger sister is allowed to a woman, according to the levirate, in respect of her deceased husband's younger brother.

*Other Connected Institutions.*—There are two other institutions intimately connected with the junior levirate and junior sororate. Their study with close attention to the entire social setting throws light on the origin and nature of the levirate and sororate as they obtain among the Gonds.

*A Woman and her Husband's Younger Brother.*—There subsists a joking (kawwānōr) relationship between a man and his elder brother's wife.<sup>24</sup>

Some of the Gond legends give us vivid glimpses into the relationship that subsisted between a man and his elder brother's wife in the Gond society of the bygone days. The incidents described therein in all probability mirror the life of the people and give us an insight into the past life of these people.

*Legend of Lingo.*—In the legend of Lingo, the seven sisters the wives of the four Gond brothers tried to seduce their brother-in-law (husband's younger brother) Lingo. The sisters after departure of their husbands from home said among themselves:

<sup>23</sup> Nagpur University Journal, 1940, pp. 162-63.

<sup>24</sup> Corresponding to this there subsists a joking relationship between a woman and her elder sister's husband.

“ . . . . This Lingo

Is our husband's younger brother, and we are his sisters-in-law ;  
we are at liberty to laugh at him ;

We can pull him by hand : and we can make him speak with us.

Lingo does not laugh at us, he neither speaks nor looks towards us ;  
he has closed his eyes ;

But he shall laugh, and we will play with him. . . . . <sup>25</sup>

So saying some held his hand and some his feet and pulled him down the swing and afterwards embraced him. Thereupon Lingo became angry and flogged his sisters-in-law.

These seven sisters complained to their husbands after their return from hunting that Lingo was in habit of shamefully maltreating them and ‘taking their shame’ in their absence. The four brothers believing on their wives took him to the jungle on the pretext of hunting a large animal and killed him.<sup>26</sup>

*Legend of Rai Linga.*—The other legend too presents a similar picture. Rai Linga had six sisters-in-law who one day took counsel and said :

“Let us sleep with him for one night each and see whether he will talk or not.”

The first night the eldest forced him to lie down with her, but Rai Linga went to sleep and slept all night through. He neither moved nor touched nor laid a finger on her. So one by one each of them slept with him for a night, but Rai Linga neither spoke nor touched them.

Then the six sisters determined to carry him off to the jungle and see if they could seduce him. So on the pretext of shooting the green pigeon they took him to the jungle and there caught him and stripped him off his clothes. Nevertheless Rai Linga said nothing.

These seven sisters who were unsuccessful in their attempt, the story runs, informed their husbands, as in the previous legend, that Rai Linga misbehaved with them and the brothers of Rai Linga consequently attempted on his life without success.<sup>27</sup>

Both these legends no doubt describe the younger brother, Lingo in the first and Rai Linga in the second, as sinless and more or less saintly, but these

<sup>25</sup> Hislop, Rev. S., *op. cit.*, Part II, verses 359-71.

<sup>26</sup> *Ibid.*, verses 392-423, pp. 30-32 and 98. The expression ‘taking their shame’ conveys the sense of outraging their modesty.

<sup>27</sup> Trench, C. G. C., *op. cit.*, Vol. II, pp. 20-23.

legends are replete with interpolations and are not in their original form. In spite of this they contain elements which give us a glimpse into the period when the institution of junior levirate which probably operated in some form in brother's life-time was already in transition. The legends also corroborate Frazer's opinion as to why the levirate operates only after the death of husband while the sororate operates both during the life-time and after the death of the wife.<sup>28</sup>

*Mutual Avoidance.*—There is a relationship of mutual avoidance between a man and his younger brother's wife and his wife's elder sister. This taboo of mutual avoidance prohibits a man from having any direct communication or dealing with his younger brother's wife. So rigidly do they observe this taboo of mutual avoidance that a woman is prohibited from cleaning the dish from which her husband's elder brother has taken his food; and also from washing and even touching his clothes. In some orthodox families, it is even supposed indelicate for a woman to serve him his food and sleep in the room in which he sleeps. In poor families having only one room in the house a curtain is hung to divide the room into two parts to enable a woman to feign the observance of this age-long custom.

A man also observes mutual avoidance in respect of his wife's elder sister though not so rigidly as in the case of his younger brother's wife. He is not permitted to touch her and it is her duty to avoid close contact with him. In some localities the restrictions imposed on these relatives are almost identical with those imposed on the *Taṛā Muṛiāl* (husband's elder brother) and *Tammur Kōriār* (younger brother's wife).

The custom obtains among the Maria Gonds also. In the Garchirolī tahsil in the Zamindari tract the taboos connected with the custom are similar to those obtaining in the Nagpur plain and the Satpura region. Among the Marias of this tract it is enjoined by custom that the two persons who have to observe mutual avoidance in respect of each other should not stay in the house at the same time unless some one else is present. This custom, however, is not strictly followed nowadays.

The custom of mutual avoidance is widespread and deeply rooted in the social life of these people. Habits of avoidance are developed by both the parties and they are helped by other members of the family. Its observance is strictly rigid in backward tracts of the Gond country and in the aristocratic

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<sup>28</sup> According to Frazer it is the greater strength of jealousy in men than in women which prompted men to refuse to share their wives with their brothers while women have always been and are still often quite willing to share their husbands with their sisters (Frazer, *op. cit.*, Vol. IV, pp. 150-51 and see p. 20).

Gond families; but it is becoming slack in the urban areas among the more advanced section of the Gonds. It has practically disappeared from among the poor Gonds who live in cities and maintain themselves by doing menial work.

In the Nagpur plains and the Satpura region a man who commits a breach of this social custom has to pay a small penalty to his tribesmen. During social ceremonies such as marriage when men and women mix rather freely and strict observance of the avoidance taboos becomes practically impossible, men who gather for celebration subscribe a small amount each and spend it on some such thing in the enjoyment of which all can equally participate. Generally liquor is purchased and enjoyed by men and women alike attending the marriage ceremony. This is regarded as a penalty willingly undergone to atone for the social sin which, it is supposed, they have committed under unavoidable circumstances.

In the Nagpur district it was observed that at the end of the marriage ceremony a bride and bride-groom go from home to home in the village and collect a small amount from their tribesmen for being spent over liquor for the purpose mentioned above.

*Origin of the Custom.*—The custom of avoidance between persons related to each other in certain ways prevails among many other tribes. The parent-in-law taboo obtains among a number of tribes in Australia, Oceania, Africa and in Siberia. In Melanesia a brother and a sister observe avoidance in respect of each other. Among the Thongas in South Africa a man has to observe avoidance in respect of his younger brother's wife and wife's elder sister. Social relationship between a man and his younger brother's wife is tabooed in the Andman Islands. In fact the custom of mutual avoidance as observed by different primitive tribes differ widely—not only as regards the relations between whom it is enjoined but as regards the rigidity with which it is observed.<sup>29</sup>

Many theories have been advanced to explain this peculiar custom but no one theory satisfactorily explains the cause of avoidance of so many different types. The complexity and close interrelation of various social phenomena forbid giving a general cause for all as it is found the world over. The custom needs to be studied as has been rightly pointed out by Lowie and others with close attention to the entire social setting.

The custom of avoidance, as it prevails among the Gonds, relates to the relatives-in-law and that also only to those who belong to the same generation

<sup>29</sup> Lowie, R. H., *op. cit.*, pp. 80-102. Boas, F., *General Anthropology*, p. 445.

considered from the genealogical point of view. Besides, a man observes avoidance in respect of his wife's elder sister only so long as the relationship subsists as such and such only and is not changed into one permitting their marriage. Thus a man may joke with his wife's elder sister and even marry her if she subsequently becomes his Ange (elder brother's wife). Similarly a woman's avoidance in respect of her spouse's elder brother is in respect of his position as such and not otherwise. Thus a woman may joke with a man related to her as her Bhāto (elder sister's husband) and even marry him, but she will have to observe avoidance in respect of him as soon as she marries his younger brother transforming the relationship so long subsisting between the two into that of a woman and her husband's elder brother.<sup>30</sup> It will be seen from the above that the custom of mutual avoidance is to be read in the context of the institutions of junior levirate and sororate and the system of joking relationship. In fact it may be reasonably concluded that the custom originated in the desire to restrict within certain limits the operation of levirate and sororate which perhaps once operated among the Gonds, as among other primitive tribes, in the unrestricted form.<sup>31</sup>

This view is supported by the opinion of Lowie expressed in respect of the cases<sup>32</sup> 'affected by the junior levirate and sororate' that social and sexual restrictions go hand in hand, a conclusion adopted in more general form by Dr. Goldenweiser on the basis of Sternberg's unpublished Gilyak data and by Dr. Rivers as a result of his Oceanian researches<sup>33</sup>; and that licensed familiarity generally obtain between relations who are potential mates.<sup>34</sup>

According to Frazer the rules of avoidance are "precautions designed to remove the temptation to sexual intercourse between persons whose

<sup>30</sup> See pp. 162-63 of the *Nagpur University Journal*, 1940.

<sup>31</sup> The levirate in the unrestricted form prevails in the Banks Islands and the Torres Straits (Lowie, R. H., *op. cit.*, p. 31).

<sup>32</sup> The typical cases of this type are those of the Thongas and the Andman Islanders. A Thonga woman is free in her relations with her husband's younger brother whom she may some day wed, but distant reserve characterises her intercourse with her husband's elder brother who can never marry her. A Thonga man observes avoidance in respect of his wife's elder sister who is not among his possible mates, and treats with the utmost freedom her younger sister who may become his subsidiary wife. Similarly in the Andaman Islands social relationship between a man and his younger brother's wife is tabooed while no restriction on intercourse between a man and his elder brother's wife obtains. The custom of junior levirate prevails among them. (Lowie, R. H., *op. cit.*, pp. 97-100).

<sup>33</sup> Rivers in his later work (*Social Organisation*, pp. 65-66) expresses the view that there is little doubt these customs of avoidance are concerned in many cases with the potentiality of sexual relations and "where relations now avoid one another, sexual relations were formerly allowed, if they were not habitual".

<sup>34</sup> Lowie, R. H., *op. cit.*, pp. 97-100.

marriage union is for any reason repugnant to the moral sense of the community".<sup>35</sup> Among the Gonds the spouse's elder brother in case of a woman and elder sister in case of a man came in course of time to be regarded as belonging to the generation above their own and hence they fell in the prohibited group of affines.

Parsons explains 'avoidance' between relatives-in-law on the ground of reserve.<sup>36</sup> Strangers coming into a family cause a feeling of restraint and newcomers are required to observe conditions of respect. This would not explain the custom of avoidance as it obtains among the Gonds inasmuch as there is a complete absence of 'avoidance' between a mother-in-law and son-in-law as well as between father-in-law and daughter-in-law. The respect due to the former by the latter in both these cases is greater than that due from a woman to her spouse's elder brother and from a man to his wife's elder sister.

The theories<sup>37</sup> advanced by Tylor and Freud too do not explain the origin of the custom as it prevails among the Gonds. Tylor's theory is a part of the theory of group hostility, while according to Freud avoidance is prompted by the desire to prevent incest. He advances his theory especially to explain the cause of mutual avoidance between a mother-in-law and son-in-law which, however, does not obtain among the Gonds.

Whatever may be the cause of avoidance, at present it is supposed to be a social sin among the Gonds to commit breach of the custom for which penalty has to be paid. The custom is observed at present not so much with the conscious desire of preventing contact between parties which may lead to undesirable union as to show respect to whom it is due, and also because of the fact that some superstitious awe is associated with its breach.

*The Junior Levirate and Sororate are Survivals.*—The conclusion that the levirate and sororate were once prevalent among the Gonds in unrestricted form is supported also by the classificatory terms of relationship such as 'father', 'mother', 'son' and 'daughter'.

The children of a man and a woman related to each other as *Seäld Sanne* (younger sister's husband) and *Tongorār* (wife's elder sister) address them as 'father' and 'mother' respectively though they are prohibited from marrying each other. They too in return call each other's children as 'sons'

<sup>35</sup> Frazer, *Psyche's Task*, pp. 77-81, 84, 95.

<sup>36</sup> Parsons, E. C., "Avoidance in Melanesia," *J. A. Folklore*, 1916, Vol. 29, pp. 282-92, quoted by Boas in *General Anthropology*, p. 448.

<sup>37</sup> Boas, F., *op. cit.*, p. 449. Freud, *Totem and Taboo* (Pelican Book), pp. 1-121.

and 'daughters'. A man applies the terms 'son' and 'daughter' for the children of his younger brother whose widow he is not entitled to wed. A woman also does not distinguish her children from those of her husband's elder brother so far application of kinship terminology is concerned.

The kinship terms are more stable than the social fabric in which they originate and persist for ages after it is rent asunder. The kinship terms enumerated above must have originated among the Gonds as among other primitive tribes when the levirate and sororate operated in unrestricted form and they continue to be in existence because of the conservative nature of such kinship terms.

*Origin of the Levirate and Sororate.*—Among the Gonds the younger brother has an incontestable right to the widow of his elder brother and it lies with him whether he will exercise that right or not. The woman is claimed by way of prerogative and not inherited as property.

Frazer who has collected instances of levirate and sororate from all regions of the globe expresses the view that "they are two sides of a single ancient institution, to wit, a practice of group marriage in which a group of brothers married a group of sisters and held their wives in common."<sup>38</sup> The only reasonable and probable explanation of group relationship terms, according to him, is that they originated in a system of group marriage.<sup>39</sup>

Lowie characterises this view of Frazer regarding the origin of levirate and sororate as an empty guess. According to him kinship terminology is not necessarily expressive of actual sexual relations and the social phenomena of levirate and sororate by themselves explain fully why father and father's brother and mother and mother's sister should be classed together. He accepts in general, Tylor's view that levirate results from the notion of marriage as a compact between groups rather than individuals from which it follows that when a union terminates by the death of one of the mates a substitute is automatically supplied by the group to which the deceased belonged.<sup>40</sup>

*Primitive Form of Gond Marriage.*—The primitive form of Gond marriage was of the nature of a family contract. The union of individuals was largely symbolic of an alliance of groups in which a man by marrying a woman acquired marital or sexual privileges in respect of her sisters, conceding to his brothers similar right in relation to his wife. Correspondingly a woman

<sup>38</sup> Frazer, *op. cit.*, Vol. IV, p. 149.

<sup>39</sup> *Ibid.*, Vol. I, p. 340.

<sup>40</sup> Lowie, R. H., *op. cit.*, pp. 58-59. Tozzer, *Social Origin and Continuities*, p. 142.

too by marrying a man acquired similar privileges in respect of her spouse's brothers, and conceded similar right to all her sisters in relation to her husband. Among the Gonds generally such marriage relationships—both actual and potential—are sought to be established as far as possible between the brothers of one family and sisters of another.

The folk song cited previously describes how Lingo's four brothers married seven sisters of another family.<sup>41</sup> The story of Rai Linga too tells that Rai Linga and his six brothers married seven sisters.<sup>42</sup> Even now among the Gonds instances of sisters of one family marrying the brothers of another are not uncommon.

The custom permitting a younger brother to demand compensation from the man who marries his elder brother's widow support the view that a man has the first claim to be her husband though this claim may be and is frequently waved these days in favour of another man. The prescriptive right of the younger brother to marry his deceased elder brother's wife is also evident from the practice prevailing in some parts of Bastar, that whenever an outsider marries a widow he has first to go through a joint ceremony with the younger brother of her deceased husband who thereby relinquishes his right in favour of the outsider.<sup>43</sup>

In some localities of the Satpura region the husband of one of the elder sisters of the bride has to carry the bride on his back to the house of the bridegroom. This practice can be interpreted as a simultaneous assertion and renunciation by a man of his right of marrying his wife's sisters. Among the Dandami Marias<sup>44</sup> during the marriage ritual connected with the presentation of ring by the bridegroom to the bride, the bridegroom has to present rings to the bride's sisters, in addition to one put on her finger. This practice obtaining among the Dandami Marias is symbolic of a form of union by which a man by marrying a woman acquires at the same time a right of potential husbandhood in respect of his wife's sisters. This right in so far as it relates to the elder sister of the bride has been modified to the extent that she receives the ring not in her hand, as the younger sister does, but in the corner of her sari held out from a distance—at the same time reminding<sup>45</sup> him that he is required to observe avoidance in respect of her. This

<sup>41</sup> Hislop, Rev. S., *op. cit.*, pp. 25-26.

<sup>42</sup> Trench, C. G. C., *op. cit.*, Vol. II, p. 26.

<sup>43</sup> See p. 10.

<sup>44</sup> Grigson, W. V., *op. cit.*, pp. 256-57.

<sup>45</sup> "From now onwards you must neither touch me nor utter my name till I am dead. If you do, all will laugh at you, and your brethren will fine you," *ibid.*, p. 256.



modification must be due to the subsequent prohibition of marital union between a man and his wife's elder sister.

The relationship term 'Seriar' which a woman uses for the wife of her spouse's brother signifies 'Little wife' and is suggestive of a social condition in which each of group of brothers is supposed to be the potential husband of each of their wives though sexual intercourse between them is by preference confined to the pair actually married.

*The Levirate and Sororate in Life Time.*—That man enjoyed sexual privileges in respect of his brother's wife in the life-time of his brother and so also a woman was entitled to similar prerogatives in relation to her sisters' husbands in her spouse's life-time can only be inferred from the study of the institutions of junior levirate and sororate, the custom of mutual avoidance and the system of joking relationship all of which are intimately connected with each other and form different aspects of one and the same social phenomena, to wit, the primitive form of Gond marriage in evolution. The Gond society has marched a long way from the pristine social stage when the levirate could operate in the brother's life-time; and the moral development attendant on the economic and social development of these people led to the disappearance of the practice. The contact with the Hindus also played some part in the evolution of the institution in this direction.

Frazer is of opinion that the strength of jealousy in men to refuse to share their wives with their brothers and willingness of women to share their husbands with their sisters—an assumption which is at least open to doubt—must have played a great part in the evolution of the institution of marriage. According to him, however, it is on account of this difference in the psychological make up of men and women that we find at present that the custom of levirate operates only after the death of the husband, while the sororate operates both during the life-time and after the death of the wife among the primitive tribes and castes in different parts of the world.<sup>46</sup>

The form of marriage designated as 'group marriage' or 'sexual communism' by Frazer, Rivers, Tozzer and others were found principally in parts of Australia, Melanesia and Polynesia.<sup>47</sup> "In its simplest form, a group of men is married to a group of women. In practically every case, each man has a primary wife, but access to her is allowed to others. In the same way a woman has a main husband, but she is not his sole companion.

<sup>46</sup> Frazer, *op. cit.*, Vol. IV, pp. 149-51.

<sup>47</sup> Frazer, *op. cit.*, Vol. I, p. 308 Sqq. and p. 363 Sqq. Rivers, *op. cit.*, pp. 44, 45 and 79. Lowie, *op. cit.*, pp. 46-59.

In most instances the men as a group are related to each other and also in a very definite way to the women who, in turn, are of the same kindred."<sup>48</sup> It has been noted that the institutions of totemism, exogamy and the classificatory system of relationship obtain among the tribes practising the above form of marriage. Dual organisation also exists in some cases.

*Transition from the Unrestricted to the Restricted Form of the Levirate and Sororate.*—In the social evolution of men, it is noticed that there is a general tendency to identify the elder kin of oneself and one's own spouse of the contemporary generation with those belonging to the generation above him or her. This tendency has been noted among some Siberian tribes,<sup>49</sup> e.g., the Votyak and the Yukaghir and is almost universal among the castes and tribes of Southern India. Thus the relationships conceived between a man and his younger brother's wife and between a woman and her younger sister's husband are those of father-in-law and daughter-in-law and mother-in-law and son-in-law respectively. Union between persons so related being regarded as undesirable marital prohibition came to be extended to them and the custom of mutual avoidance necessarily arose to guard against the possible union of such relatives-in-law.

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<sup>48</sup> Tozzer, *op. cit.*, pp. 139-40. (The tribes reported to have practised this form of marriage are the Dieri, the Urabunna and others.)

<sup>49</sup> " . . . the Votyak have a single word for any male kinsman older than the speaker, and the Yukagir denote by one term the husband's father and the husband's elder brother."—Lowie, R. H., *op. cit.*, p. 98.

## ORIGIN OF THE SONGS OF RIGVEDA\*

BY P. S. SHASTRI, M.A.

### PART I

THERE are two schools of thought explaining the origin of the Rigvedic songs. One view maintains that they did not originate with reference to the rituals ; they are the naive utterances of a deeply felt religious faith; they are the spontaneous overflowings of divinely inspired seers. The Rigveda is a literary document of the Indo-European family, when only the art of poetry blossomed. This view makes religion and its cult secondary; and takes the Rigveda as shedding light on the history of human thought and civilization. It is more the historical aspect, besides the social one, that is stressed here. Yajurveda and its allied literature consequently deal with the practical aspect, the religious cult proper. This is the view taken by Kaegi, Whitney, Roth and others.

The other view maintains that they were composed mainly having the rituals in view; they are fabricated for certain sacrifices and nothing else. This is the stand taken by Oldenberg, Bartholomae and others. Bloomfield also may be classified in this section in a way, though he has some conflicting views to make on this subject. These critics find primitive religion in anything ancient concerning India. They ignore certain plain facts, and their deductions from some hymns are generalised to the detriment of genuine criticism. Ideas of fine art, of æsthetics never seem to enter their field of observation here.

The second of these views is held by Oldenberg in his *Religion des Veda*. He views Rigveda as the oldest document of Indian literature and religion; and tells us of the "sacrificial litanies, with which the priests of the Vedic Aryans on a templeless place of sacrifice, at the sacrificial fires strewn around with grass, invoked their gods—barbarian priests—the barbarian gods, who with horses and chariots come driving through the sky and air in order to feast on the sacrificial cake, butter, and meat, and to imbibe, with the intoxicating soma juice, courage and divine strength. The singers of the Rigveda, in a manner inherited of old, composing for the great and pompous. . . . soma sacrifice, do not want to tell of the god whom they are honouring, but they want to praise this God . . . . So they heap

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\* This is one of the chapters of my forthcoming book, *A Literary Study of Rigveda*.

upon him all glorifying epithets which are at the disposal of the grossly flattering garrulousness of an imagination which loves the bright and the garish. . . . Such poetry could have arisen only in the exclusive circles of the priestly sacrificial experts."<sup>1</sup> He observes that "the poetry of this art could only have a priestly ritual technique in those times; it is the poetry of the ritual songs, clothed in ritual technique; and the poetic form", he tells us, "is only a secondary process. The whole text breathes with ritual songs and litanies, and the thought is entirely religious."<sup>2</sup> The Rigveda speaks of the religious thought of India, which shows us the oldest poetry of the ritual in the light of its priestly thought and expression.<sup>3</sup>

Even Oldenberg evidently ignores in his general remarks on the character of Rigvedic poetry, what he has observed elsewhere in the same book about Uṣas. He was able to see there that the hymns addressed to Uṣas "steer clear of the mystic sophistries of sacrifice technique; and they have a charm that is wanting in the sacrificial hymns proper."<sup>4</sup> Generally speaking, this can be taken as a proper estimate of the Sanhitā itself, when it is shorn of some sacrificial hymns. An examination will reveal that even the liturgical hymns breathe the poetic spirit. The second fact we have to note is the condition under which the text was compiled. The hymns contained in the Sanhitā represent the culmination of a great civilization and culture, and it was compiled at the end of that period to ensure the safety of the text and of its culture, though it was utilized subsequently in the sacrificial cult. And ignoring this fact he makes out the priests and their deities barbarians! There is no evidence to warrant the conjecture that the divinities and others were invited to be actually present on the strewn grass, and accept the offerings. It is more the supreme power, force and illumination underlying the visible phenomena that are considered divine and invoked as such. They craved for light, for immortal effulgence, and we have in the Rigveda an original mystical and metaphysical doctrine alone, which was later on edited systematically in the name of the Upaniṣads. And Yāska seized upon the right point when he gave vent to those celebrated lines—

"Sākṣāt Kṛta dharmāṇa ṛṣayo babhūvuḥ.  
Te'varebhyo 'sākṣāt Kṛta dharmabhya  
Upadeśena mantrān samprāduḥ" (1.20)

<sup>1</sup> H. Oldenberg, *Religion des Veda*—Character of Rigvedic poetry is dealt with on pp. 3-7.

<sup>2</sup> *Ibid.*, pp. 8-14—Quellen für glauben und cultus des ältesten vedischen zeit ergeben.

<sup>3</sup> *Ibid.*, pp. 591-97—Rückblick.

<sup>4</sup> *Ibid.*, p. 237.

A good number of these poets—and all, if only we can understand them thoroughly—are mystics pure and simple who hungered after light, sweetness and immortality.

All the *riks* were not composed for the soma sacrifice or any other ritual. We come across the sacrificial songs mostly with reference to Agni, Indra and Soma alone. Even out of these five hundred and forty songs, a fairly good number have no liturgical connection. The beautiful songs and lyrics that are addressed to Uṣas, Sūrya, Viṣṇu, Varuṇa, Parjanya, Brahmanaspati and others have a purely literary and poetic origin and growth. In the ninth book, we come across what are called the 'labour songs', which relieve the monotony of preparing laboriously the soma juice, and act as stimulii. The marriage song, the gambler's monologue, the forty *dānastutis*, the poetical dramatic pieces, and many other secular poems have absolutely nothing to do with the litanies or the religious cults. The poets knew fully that they were poets first. Even the *āprī* hymns are poetisations of litanies.

The Vedic poet was always on a friendly relation with his deity, who co-operated with him at all times; and it is contrary to fact to say that such a poet exhibits "the grossly flattering garrulousness of an imagination which loves the bright and the garish." On the other hand, we have many passages in the text, where the poets speak of their spontaneity and earnestness. Further as the subsequent sections clearly show there is an intensity and sincerity in their songs which is unparalleled.

There is the imagery of the rituals in Rigvedic poetry, but it is not here that they sound the higher and the purer string of poetry. These ritual images only go to prove their ways of poetizing anything, ennobling anything. The classic instance is the hymn addressed to Yūpa (3·8). It did not appear to the poetic imagination as a bare sacrificial post, but as a form of Agni, being the sovran of the forest. Reposing on the Mother's bosom it stands upright, while the altar becomes the loftiest spot of the earth. It is even well robed, enveloped, and youthful. As it is cut to form the sacrificial post, chips of splinters fell from the tree; and these are the pillars that have come arrayed in brilliant colour like swans that flee in lengthened line. Everything even of the rituals has to pass through the winnowing basket of imagination, and assume an imaginative stretch to enter the universe as a mighty force. This is not the ritual technique, but the poetic.

When we consider the hymn 1·120 which has only twelve stanzas, where the first nine are cast in nine different metres (*Gāyatrī*, *Kakubh*, *Kāvirāj*, *Naṣṭarūpī*, *Tanuśirā*, *Uṣṇih*, *Viṣṭārabṛhatī*, *Kṛti* and *Virāj*), and consider the metrical structure, polish and finish of the entire text, save a few hymns,

we cannot afford to say complacently that "the metrical form is only a secondary process." The metre has a very important place here, and as such it adds to the literary dignity and finish. In a literary poem metre cannot be left out of consideration, for we demand in it the music of the meaning and the meaning of the music. The collection does not breathe a ritual atmosphere throughout as Oldenberg supposed. The ritual has only a subordinate place. The glowing funeral hymns of the last book are treated by him as belonging to the ritual of cremation,<sup>5</sup> but he forgets that they are the picturesque descriptions of scenes actually observed by the poet as the eleventh stanza of 10·18 and the others clearly prove.

Again in his *Die Literatur des alten Indien* he observes "This poetry does not rank in the service of beauty, as this religion does not serve the aim of enlightening and uplifting the soul; but both rank in the service of class interest, of personal interests, of the few."<sup>6</sup> He forgets that there are only forty dānastutis; and even in these we have at times some beautiful ballad snatches like that of Romaśā in 1·126. Rigveda is nothing, if it is not an anthology of poetry, and the religion of the Rīgvadic seers, if at all they have any, is the worship of beauty, which does "uplift the soul" and transport us to higher regions. The mystic and metaphysical raptures of these poets when they imagine and experience Uśas or Parjanya, or Savitar or any other supersensuous nou menon, reveal us of the latent possibilities and act as a sort of "mind-cure".

Maurice Bloomfield gives vent to another explanation of the origin of these songs. "On the whole and in the main the R̥gveda is a collection of priestly hymns addressed to the gods of the Vedic pantheon. The chanting of these hymns is regularly accompanied by libations of the intoxicating drink soma, and of the melted butter or ghee. The enduring interest of the Rigveda as literature lies in these old priestly poets' vision of the beauty, the majesty, and the power of the gods, and in the myths and legends told of them, or more often, merely alluded to in connection with them. But the paramount importance of the Rigveda is after all not as literature, but as philosophy . . . . The keynote and engrossing theme of Rīgvedic thought is worship of the personified powers of nature." And again "Rigveda presupposes a tolerably elaborate and not uninteresting ritual, or scheme of priestly practices".<sup>7</sup> Not being content with calling the Rīgvedic hymns 'sacrificial hymns', he goes to the extent of naming them "The

<sup>5</sup> H. Oldenberg, *Religion des Veda*, p. 571.

<sup>6</sup> *Ibid.*, p. 20.

<sup>7</sup> M. Bloomfield, *Religion of the Veda*, pp. 29-31.

sacrifice treated poetically. In other words these poems are incidental to the sacrifice." The earliest Indian poetry appeared to him as being dominated by the single idea of the praise of the gods in connection with the sacrifice. He recognises that there are in Rigveda "dithyrambic hymns, often turgid and intentionally mystical," and even "this poetry hugs the sacrifice closely".<sup>8</sup>

Examining the comparison of Uṣas with the sacrificial post in 1·92·5, 4·51·2, and the appellations Maghoni and dakṣiṇā to her, besides other sacrificial hymns he arrives at the conclusion that the "economic advantage and æsthetic delight are much the same thing to the soul" of the Vedic poet.<sup>9</sup> Max Müller renders the words dakṣiṇa by 'clever', as he considered that a poet cannot degrade so charming a theme by such a comparison. Abel Bergaigne interprets it as 'sacrificial fee' but observes that "she is the gift of heaven bestowed upon pious men as a recompense for their piety."<sup>10</sup> To quote Oldenberg, who too saw rituals in the poetry of Rigveda like Bloomfield, "the hymns to dawn waft to us the poetry of the early morn; they steer clear of the mystic sophistries of sacrifice technique; and they have a charm that is wanting in the sacrificial hymns proper."<sup>11</sup>

The following passages from his *Religion of the Veda* will bring forth clearly his varied views:—

"Never has sacrifice had such genuine poetry to serve it. But the reverse of the coin is, that never has poetic endowment strayed so far from the wholesome themes to fritter itself away upon the ancient hocuspocus of the fire-priest and medicine-man. Of course, what finally saves this poetry from banality is the presence in it of these same luminous gods whose brilliance is obscured but not extinguished by such childish treatment."

"The poetry of the Rigveda is in the main also really dull and mechanical, but in good part it is leavened by true beauty of conception, fineness of observation, and all the circumstance of literary composition."

And again a few lines below we read:—

"If we cut out the foolish sacrifice, and pare down a pretty thick crust of conventionalism, there is left in the Vedic hymns enough of beauty and character to secure them a place in the world's literature. Forget but the string that ties the thought of the Vedic Ṛsis to the sacrificial post, and you shall see that thought flit far away to great heights, where birds do not fly

<sup>8</sup> M. Bloomfield., pp. 64, 65.

<sup>9</sup> *Ibid.*, p. 70. See pp. 66-73.

<sup>10</sup> Abel Bergaigne, *La Religion Vedique*, i, p. 127 ff., quoted by Bloomfield, p. 72.

<sup>11</sup> *Religion des Veda*, p. 237.

(1.155.5). For the time being, at least, it becomes what we call inspired, and, anyhow, it breeds the germs that shall flower out to great things in future days, when Hindu thought finally emancipate itself from sacrifice along with many other trivialities of life."<sup>12</sup>

The relation between sacrifice and poetry has been touched while examining one of the contentions of Oldenberg. Of course, there are certain materialistic passages in the sublime songs, but they matter very little as they occupy a negligible position in the arrangement of the verses, and in their content. This has to be borne in mind, for later on he admits that the poetry of the Rigveda is in a deeper sense original, and that it is primitive religious poetry, in the sense it maintains contact with the last source of its inspiration. "Most religions have a trick of throwing a poetic and sentimental glamour" around the religious practices. Both the poetry and the religion of the Rigveda, he tells us complacently, are of singular interest and importance. And now he observes, "In its essence the Rigveda is not liturgy but mythology," and these poets are both poets and philosophers.<sup>13</sup> The "dull and mechanical" poetry of Rigveda, which seemed purely ritualistic, was seen in the light of poetic frenzy, and now as mythology; the seers soon became poets and philosophers, the religious cult being relegated to the background.

The same book at a later stage shows us another idea. The essence of Rigveda, he observes candidly "is poetry, or rather, more precisely, poetic exaltation, or the pride and joy of poetic creativeness."<sup>14</sup> The degree in which the gods are pleased can be measured with the finer frenzy of the poet and the more finished production of his art. Hence the deities heartily co-operate with the poets in their compositions. "Finally, these twin factors of devoted fervour and its successful utterance in hymns and stanzas create sensations of satisfaction which are easily taken for sanctification. At first the article is not very genuine. But it goes on being the receptacle of better thoughts until it grows into what we may consider real religious feeling."<sup>15</sup> The sacred text appears as poetic exaltation", or "poetic creativeness", representing faithfully the "real religious feeling," though the article was at first "not very genuine". "The vedic poets are trained 'master-singers'. Such poets are not likely to penetrate far into the soul of man. There is no real warmth or depth, no passionate indistinct

<sup>12</sup> Bloomfield, pp. 75, 76.

<sup>13</sup> *Ibid.*, pp. 80, 81.

<sup>14</sup> *Ibid.*, p. 198.

<sup>15</sup> *Ibid.*



feeling, no unsatisfied longing which can be made hopefully enduring, or even pleasurable and exalting, through the mystery of a relationship with perfect beings, understood by each individual soul in its own way. Anything like a contemplative and trustful joy in the perfection of the gods comes much later; it is of the Bhagavad Gīta, rather than the Rigveda."<sup>16</sup> These thoughts of Bloomfield yield the plain conclusion that the Rigvedic poetry is 'dull, mechanical', 'not very genuine', 'crafty', 'flattering', lacking depth, wanting earnestness and spontaneity. In a word it is "foolish sacrifice".

Probably relying on the Śrauta literature, or on the analogy of real sacrificial hymns, Bloomfield believed that all the hymns have their actual application in the sacrifices. This is not true of the majority of the hymns. Whenever and wherever we hear of beauty, of majesty and of power, we are face to face with the sacred and ultimate truths revealed by the seers, in their mystic and prophetic moods. The glories of nature, the sublimity of conceptions and imagery, the wide, keen, and penetrating observations and the mystic consciousness are all clothed with the poetic spirit. One poet observes that "they who toil have found enjoyment with Indra in the light's beauty, singing in the assemblies" (10.12.7). They were always very keen to notice Beauty and record it. Youth is the beauty of life, and even Gods are styled as youths, Yaviṣṭha and the like. They decorate themselves, and their wives, and tell us that the gods too beautify themselves like mortals and like women. They embellish the hymn as if it were a young lady. All the descriptions of the deities sound as if they were cataloguing a list of beautiful objects. It is the worship of Beauty that we notice everywhere in the Rigveda; only a few hymns have a real ritual content.

The Rigvedic seers were always conscious of the fact that the rituals were happening; but they did not encumber their poetic muse with all the trivialities of the cults. As far as possible they utilised the opportunities offered by the sacrifices and brought forth sublime poetry brimming to the cup with religious consciousness of a rare depth and profundity. They have, of course, treated "sacrifice poetically"; but this is true of the hymns like the one dealing with the sacrificial post, which Bloomfield himself calls "foolish" at one place, and "poetically creative" at another. And hymns of this sort do not form a majority in the Rigveda. It is only later on that the priests have made the Rigveda "incidental to the sacrifice."

<sup>16</sup> Bloomfield, p. 201. Also see *J.A.O.S.*, Vol. 17, where he maintains that all the songs have a ritual origin and application. This has been endorsed by Keith (*J.R.A.S.*, 1910), and negated by Charpentier in his *Die Suparnasage*.

Besides religious hymns and litanies, we have pure poetry and art in abundance. The dialogues, monologues, ballads, songs, philosophical and mystical hymns, and those devoted to the interpretation and exposition of Nature and Beauty—these constitute the bulk of the Rigveda, and here we have the pure artists at work. We find also the didactic verse and the *dānastutis* that are neither literature, nor religion. And to say that the Rigveda is a book on Religion, is to ignore its very contents, unless we say that art or beauty is the religion of the artist.

The Rigvedic poet did not view the divinity as a spiritual abstraction, something like a dark cave where everything appears to be dark. It did not have the stamp of Spinoza's Absolute or that of Fichte, a den to which all cows go, but find no return, as Hegel puts it. The divinity exists for the individual, or it does not exist at all. Every rational system of philosophy has to reconcile the transcendental with the empirical, by some rational process. The Vedic seer is a born Idealist, who attaches great value to the principle of Individuality, who can conceive the deity only in relation to him and to the universe at large; and consistently enough this Idealism is permeated by Realism also. It is not the pure economic advantage that the poet craved after. But we have to remember that most of these verses come only at the end of the hymn. He wants the company of the deity first, and this deity appeared to him in different aspects, and in different garbs. Throughout they stressed the significant and the beautiful. In a word they sought after immortality and sweetness. "The ever vigilant lovers of holy song light up the most sublime station of Viṣṇu; this abode is laid up in the heaven like the eye" (1·22·21, 20). "They have taken soma and become immortal; they have attained the light and discovered the gods" (8·48·3). The immortal lines 9·113·7-11 addressed to Soma clearly speak of the Beautiful heaven, the ideal goal which the Vedic poet conceived. There is the everlasting lustre, the secret shrine of heaven, the lucid universe full of light, the union of happiness and transport, and the fusion of joy and felicity. These æsthetic passages are the true content of the Rigveda.

It is not the presence of the luminous gods in the sacrificial Cult, that saves it from banality. The deity is a symbol of Light, effulgence. The impatience of the poet in his eagerness to obtain that immortal light, has extended his range of perception, imagination and intuitive faculty. His ideas are those of the "expansive order", which alone is the poetic spirit. The sacrifice is only a minor entertainment; poetry and the genuine mystic consciousness are their prime concern; and the entire Rigveda is pervaded by these things.

A poetry "leavened by true beauty of conception, fineness of observation, and all the circumstances of literary composition" cannot be considered as "really dull and mechanical": And it is exactly this which Bloomfield does and from his argument the necessary inevitable conclusion follows that there is no poetry or art in this Universe till the present day. On the face of it it is not acceptable. And at the same time he admits of the inspired quality of a good number of these hymns.

Bartholomae in his "Religions of India" takes the Rigveda as "pre-eminently sacerdotal". All these authors ignore the long interval that has stepped in after the Riks were composed. It is only from the time of its edition that a ritualistic interpretation was thrust upon it. The original æsthetic doctrines and meaning were ignored deliberately, and a new interpretation was sought for *apauruṣeyatā*, and for the guarding of the text from any future tamperings. The musical rendering of the text into *Sāmaveda* had originally an æsthetic value and motive alone. The critics have successfully ignored these things. The Rigveda represents the utmost possible advance of human thought and art of a bygone age.

## PART II

Adolf Kaegi in his *Der Rigveda, die älteste Literatur der Inder* propounds the first of these contentions as regards the origin of the Rigvedic songs. He observes that "the wonderful imagery of the language shines out in transparent clearness and exuberance of sparkling brilliancy; its forms of expression are poured forth as from an inexhaustible spring; everywhere originality, richness of diction, rapid development and buoyant life meet us." We come across "fixed epithets, formulaic expressions confined to certain connections, rhetorical adornments, idioms and whole passages which repeatedly re-occur unchanged or with slight variations."<sup>17</sup> Every poet exhibits his own imagery, his individual feeling and perception. Rhetorical figures and word-play often greet us. These clearly point to an art of poetry in those times.

"The great majority of the songs are invocations and adorations of the deities respectively addressed; their keynote throughout is a simple outpouring of the heart, a prayer to the Eternals, an invitation to receive favourably the piously dedicated gift. The hymns recognise nothing of the later theory of inspiration. To that which a god placed in his soul and caused him to feel, to the impulse of his heart the singer wishes to give eloquent

<sup>17</sup> Adolf Kaegi, *Der Rigveda*, p. 33.

expression. "Like fair and well made robes 'the powers composed the hymns as a skilled workman makes a chariot' " (5·29·15).<sup>18</sup>

Here the only point on which Kaegi errs is the denial of the consciousness of inspiration to the Vedic poets. A rational stand was taken by those poets with regard to inspiration, its place in art, and its effect on art and religion. Yet he admits that those poets are "divinely inspired".

Kaegi recognises that there are unimportant, tiresome, and overburdened compositions also in the Rigveda by the side of the splendid productions of divinely inspired poets.<sup>19</sup> Yet in the whole collection, there is "a fresh breath of vigorous poetry of nature. Were any one to take the trouble of transforming himself to the religion and moral thought and action, the poetry and the working of a people and age, in which the first spiritual development of our own race is placed before our very eyes at its best, he will feel himself attracted in various ways by many of these songs, here through the child-like simplicity, there through the freshness and delicacy of their imagery and feeling, and again by the boldness of their metaphor and by the scope of their fancy."<sup>20</sup> Here is human thought from its beginnings to its culmination, as it were, and one will be surprised at the "extraordinary fulness of disclosures" made by the text towards "philology and the history of civilization". In short, it is a document of undying "æsthetic value". Considering these lines, one feels constrained to know the actual meaning Kaegi attaches to his statement that the poetry of Rigveda "belongs to the religious lyric."<sup>21</sup> Probably he means the earnestness, intensity, profundity, and sincerity of these poets, as these are the most important things in religious consciousness.

Inspiration is greatly religious; poetry and religion take their springs from it; and both pursue the same goal through different paths. As the Vedic seer sang,

"Maniṣiṇaḥ prabharadhvam Maniṣām  
Yathā yathā matayaḥ Santi Nṛṇām" (10·111·1).

They proclaim themselves as poets of the great order and command us to treat them in that way; in this, they are completely justified. They are artists pure and simple having their own literary academies called Sabhā, Samana, Samiti, Vidatha and the like. They evolved the technique of poetry here after the example of their ancients. The works they have bequeathed to us

<sup>18</sup> Adolf Kaegi, *Der Rigveda*, p. 35.

<sup>19</sup> *Ibid.*, p. 35.

<sup>20</sup> *Ibid.*, p. 36.

<sup>21</sup> *Ibid.*, pp. 4, 35.

clearly reveal the traces of their theory of poetry and fine art, a short sketch of which has been presented before the last Oriental Conference. It is impossible to say whether they had any theories corresponding to *rasa*, *dhvani* and other schools of the latter day rhetoricians.\* But we can assert that they recognised the perfect, indivisible unity of content and form, accepted the importance of the total impression, and acknowledged the influence of inspiration. Their comments on their own works reveal that they recognised embellishments, artistic finish, chiselling and, symmetry; that they demanded sweetness and pleasure; music and melody from a work of art; and that they recognised art as a great consoling factor (10·8·3) in the development and uplifting of the soul.

Oldenberg believed that the origins of the Soma ritual are transparently clear in *Rigveda*. But a good number of the *pāvamāni* hymns describe the process of preparing the juice and serve as a relief. The latter ritual is a substantial development from the comparatively simple forms of the older one, according to him. And Martin Haug has tried to prove the exact contrary. Geldner observes, "Oldenberg draws attention upon a principle of innovation, upon the application of individual verses—with the exception of a few —, which was foreign to the old ritual. It is against the spirit of old poetry to raise the attached *Sūkta* to a rule instead of an art form. By the time of the *Brāhmaṇas* the religious poetic art, and not poetry in general, is well nigh extinguished. The *hotar* has become the heir and privileged possessor of the old poetic treasure, as he was from olden times the proper person who uttered the *riks* at the ritual activities; but the spiritual production of the old poets has been at theosophy. *Yājñavalkya*, for example, is a poet in prose... In the later ritual the accompanying recitation is a stereotyped one. . . . But in *Rigveda* the novelty of the spoken—or sung—word counts much... The poet repeatedly assures us that he has composed the poem after a famous example in the manner of the classical ancient poets. These show the regulations of the art of the old *Kāvya*." They were highly keen about the artistic thing in a poem, which made theirs and those of their family appear afresh. There were others who sought to produce at least the same in a new garment." And truly a poet observes "this is the ancient hymn of our forefathers" (3·39·2). With the decline of poetic art came the rise of novelty, and they began to remodel the works of a poet not at hand. "And with it disappeared the æsthetic element from the rituals; the free art was lost through the mechanical formulaic ways." The Vedic poet was a versatile person, with a variety of occupations. He was skilled in the highly

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\* See *Poona Orientalist*, 1944.

developed alankaras of the ancient poetic art, was well aware of the innumerable tales, myths and exploits of the ancients, and knew the cosmogony and theogony. "He did not sing alone as the Bard in the more wordly gathas and nārāśamsis, of fame and the liberality of his patrons alone; He was also the spiritual poet." And then Geldner goes on maintaining that the Vedic poet had to compose "new hymns for the sacrificial fire on the wish and order of the royal Yajamāna". But this is true only of a few hymns, yet there was enough royal patronage: "The character of Rigvedic poetry is throughout courtly. The Maghavā and Maghavanah are certain to be in most cases kings or members of the royal families. As regards the dānastutis, tradition tells us that they are "Rājnām dāna stutayah". The prince longs to enjoy his glory being sung to him. They bring satiety to his thirst for glory and to his vanity even. "As the scholar lives on brahmodyas so in the flowering times of poetic art, the poetic tournaments were arranged for the most part on the orders and under the personal presidentship of the royal members who could comprehend art, in the sabhā. . . . They are called Sūri". Geldner attributes the rise of Rājarsis in this way. In those times it is not certain whether there was distinction between the classes of the Āryan community, if at all such classes existed. "The Rigveda gives in its imagery a reflected image of the Indian Court life. The life of the Kings is expressed there for all times in an unbridled way." The search after gold, and the picture of the hatāra are the outstanding features of the Vedic times, that appeared glaringly to these authors of the Vedische Studien. "In the wealthy imagery of the Rigveda there throng the hetāra and the sportive life so strikingly into the foreground."<sup>22</sup>

There is much of exaggeration in these lines, but what was said about poetry and poetic art of the Rigveda and those times in general can be taken as representing the correct view. The courtly patronage is evident throughout, if only we consider the monopoly enjoyed by the poets of a few families, even though they number seven hundred in all. They always took special pains to preserve and develop their artistic faculties.

The magic word is called by them barhaṇā giḥ; and the great speech which is many-sided and versatile is purūci. As Geldner would have it Vipah Śacyā (10·61·3) is the dexterity or adroitness of the tongue (3·97-110). The father of speech (3·26·9) is the teacher. As Rigvedic poetry was throughout highly skilled and artistic, the poet must have learnt it from a teacher. And probably the father taught his son.<sup>23</sup>

<sup>22</sup> Geldner, *Vedische Studien*, II, pp. 150-55. Pischel and Geldner, *Ved. stu.* I. Introduction, etc.

<sup>23</sup> Geldner, *ibid.*, III, p. 109.

Perfect representation and emotion characterise the domain of poetry. A great poet, observes Croce, is both a classic and a romantic, exhibiting the finished touch and the highly developed emotional sensibility.<sup>24</sup> Romanticism sets its value on human experience, on the hidden mystery, on the vision into the inside of appearances, and on the exaltation of the matter of the poem; and Classicism is its antidote. When the Rigvedic poets insisted on the unity of content and form, and when they demanded some excellences from art, they actually fused these contradictory elements harmoniously. These are represented by developing the intuition—expression phenomenon. Intuition is the “individualizing activity”, and the poet begins to utter his half seen vision as soon as this moment dawns upon him. The expression is only a partial representation of the experience and hence it begins to suggest.

The artist can experience anything and everything with the calmness of a detached spirit. Hence as Croce observes, “he has the greatest passion and sensibility, and the greatest insensibility and serenity.” He can feel that Uṣas will be scorched mercilessly like a thief by the sun, and be sorry for it. He cannot remain idle when the Immortal glow appears. He can laugh and dance awhile when there is a funeral going on (10·18·3). Here the onrush of the emotion is not neglected; but only its speed is controlled; poetry is the expression of an intuition and a too swift emotion hampers a good expression. The feelings are deeply felt; ‘felt along the blood and in the heart,’ and are translated in terms of a language. The unity of content and form is their cardinal doctrine round which hover all other essentials of art. This being based upon an irrefutable theory of inspiration has made art a creation in their hands. This theory of poetry, as envisaged by the Rigvedic poets, has its leanings to an idealistic philosophy of æsthetics.

From what has been stated above in these pages, and from what follows in the sections to come, it will be quite evident that Oldenberg and others of his way are not correct in deducing such conclusions. A great number of the hymns actually arose from non-liturgical sources, from purely poetic flights and sublime imagination of the gifted few. It is here that we breathe the serene atmosphere of great inspired poetry. And Brunnhofer is not in the wrong completely, though he exaggerates a little, in being able to find in the *Rigveda Samhita* “a prince of poets towering up out of the mists of primitive times.” We have to remember that they are not “primitive times”, but the last days of a mighty civilization, which have been washed away into the ocean of time never to return. For him, “the Veda is the

<sup>24</sup> B. Croce, *Aesthetic, and Breviary of Aesthetic*.

lark's morning trill, of humanity awakening to the consciousness of its greatness."<sup>25</sup> Winternitz, of course, denies this claim completely;<sup>26</sup> for he fails to notice the essential unity of the doctrine, poetic spirit, and imagery of the Rigveda. "Veda" etymologically means "Knowledge". The poetry of the Rigveda strives after an elucidation, a poetic and mystic exposition of Knowledge conceived as light. Uṣas, and Savitar, the two important representatives of Light, are treated by the poets as the great awakers; and naturally enough Uṣas, who brings consciousness to the Universe with her glorious dance, is really the "morning's lark." The underlying current of Rigveda is Knowledge, awakening and Uṣas is typical of it.

There are certain hymns or portions of the hymns that seem to have been specifically composed with the sacrifices in their minds. But they constitute a minority group in the Rigveda. A good number of the hymns were shown application in the rituals only later on; and this view will be strengthened completely when we come to consider their views on metre also.\* It is this quality of Rigveda that has tempted most of the Western scholars to stamp it as an Indo-European document. If by Indo-European they mean a literary and poetic document, whose essential feature is universality, then Rigveda is undoubtedly an Indo-European document, an anthology of universal poetry.

The whole Sanhitā is composed by a few families of poets. Though we note some seven hundred authors they come under eight or nine families, which again are interrelated. These clearly tell us that they "stood above, but not outside, the people", as Hillebrandt observes.<sup>27</sup> Pure literature and literary dialect are, in a day, different from the dialect and conceptions of the people at large. Art is the monopoly of the gifted few; and it is something that is inherited, not acquired. A poet is born, not made. Genius, which is the first requisite of a poet, is born with him; and only incidentally does he acquire talent. That is the very reason why great poetry is always universal and the Rigveda is a typical example. Hence it is no wonder that peoples of the world claim this for themselves too. And truly does Whitney tell us that "The Vedas appear rather like an Indo-European than an Indian record."<sup>28</sup> And Max Müller observes that "as we are Aryans in language, that is in our mental life, the Rigveda is our own oldest book".

<sup>25</sup> Brunnhofer, *Ueber den geist den indischen Lyrik*, pp. 15, 42. Quoted by Winternitz.

<sup>26</sup> Winternitz, *History of Indian Literature*, I, p. 74.

\* See Proceedings of Benares Oriental Conference.

<sup>27</sup> Hillebrandt, *Vedische Mythologie*, II, p. 4.

<sup>28</sup> Whitney, *Language and its Study*, p. 227.



Great poetry is always mystic. The seers had self-culture, self-concentration, and contemplation of the sublimest things in nature; and even a cursory reading of the hymns addressed to Uṣas, sun, savitar, and rātri prove this. The weird sights and sounds of the foaming are described in the celebrated hymn to Night (10·127), observes Macdonell with a fine perception of nature. The vivid strains in the hymns to Parjanya (5·83) and others reveal a remarkably close observation of nature, faithful and felicitous descriptions.

The complex and eternal themes which ravished their poetic brains are purely intellectual, moral and spiritual ones pervaded entirely by the artistic touch and imaginative glow. The Rigvedic poetry is earnest, genuine and original, based upon the cardinal principle of a living faith. The quintessence of the art of the sages is represented successfully in the soma cult; and it is said in 9·67·31, 32

The man who reads the essence stored by sages, the Pāvamāni hymns,  
Tastes food completely purified, made sweet by Mātariśvan's touch.  
Whoever reads the essence stored by sages, the Pāvamāni hymns,  
Sarasvatī draws forth for him water and butter, milk and meath.

Soma is vital principle of their life, of their religion, and of their art, without which everything is an impossibility.

*(To be continued)*

# A CRITICAL DISCUSSION OF THE STATUS OF SENSE-DATA

## Part V. Conclusion

BY DR. W. S. BARLINGAY, M.A., PH.D. (LONDON), BARRISTER-AT-LAW

It may, however, be urged that we are treading on thin ice and that the difference between the sensum theory and the 'relational theory of appearing' is not really so great as we have made it out to be. For on the sensum theory too, we are knowing in a perceptual situation not merely that the sensum has such and such qualities, but also that it has a certain many-one relation to the physical object. That is to say, we are knowing not merely some fact about the sensum but also some fact about the physical thing, to the effect, namely, that the sensum refers to it. But the crucial question is, as I have already indicated, whether on the sensum theory any satisfactory account can be given of the assumed fact of this 'objective' reference, and whether there are, on this theory, any means by which we could do so much as know that there are such things as physical objects at all.

### *(e) The Function of the Sense-Organs in Perception.*

Certain special problems in connexion with the functioning of the sense-organs in perception seem to be suggested by the line of argument I have been following, and with these I will now briefly deal.

At the outset, the question may be raised as to why, if the stimulation of any sense-organ conditions only the occurrence of a specific mental act of apprehension and does not condition the content apprehended, there should have been evolved a multiplicity of sense-organs in man and the higher animals. For had there been only one sense-organ the fact that different qualities of things might be apprehended through this sense-organ ought to present no difficulty, seeing that *ex hypothesi* the function of a sense-organ is merely to serve as an instrument for giving rise to mental acts which when once directed upon an object may presumably be thought capable of apprehending the different qualities of that object. But this question would have point only on the presupposition that correlated with all the different qualitative characteristics of things there is but one kind of physical energy which serves in each case as stimulus to the sense-organ. Then, no doubt there would be no apparent reason why sounds should not be heard through the eye nor why colours should not be seen by means of the ear, since whichever organ were affected a cognitive act would result which when directed upon an object would be apprehensive of its qualities. As a matter of fact,

however, we know, on scientific grounds, that the same kind of physical energy is not concerned in the stimulation of the various sense-organs. On the contrary, it is a familiar scientific fact that, corresponding to the various qualities which they are said to have, physical things emit different kinds of energy, and each of the sense-organs seems to be so constituted as to be influenced by only one kind of stimulus. The eye, for instance, would seem to be affected only by light waves and the ear by air waves. Not only so. We know also that the special sense-organs are differentiated into parts, each one of which is sensitive to only one species of stimulus and no other. Certain parts of the retina, for instance, would seem to be sensitive only to wave-motions correlative with yellow and blue and others only to wave-motions correlative with red and green; the stimulus that emanates from a yellow object is different in kind from the stimulus emanating from a red object.

In general, then, it is to be said that for each type of stimulus there is a corresponding sense-organ, or a part of what we call a sense-organ, which is sensitive to that mode of stimulation alone. So that the number of qualities which we can apprehend as characterising things is limited by the sense-organs which we possess. Obviously, it is theoretically conceivable that physical things have many more qualities than we are capable of apprehending and it may even be that animals, the structure of whose sense-organs is different from our own apprehend qualities in things which we do not. This consideration tells in two ways. On the one hand, it limits the number of determinable qualities, such as colours, temperatures, or sounds, which we can apprehend; and, on the other hand, it limits the range of the completely determinate or specific qualities apprehensible under each determinable. As an instance of the latter, it seems to me not unreasonable to surmise that the range of specific colours in nature may be far greater than what we can actually be aware of.

It does not, however, follow that to every qualitative characteristic of the objects of apprehension there must necessarily correspond a difference of type in the stimuli which emanate from these objects. It seems to me far from certain that two or more qualities may not have correlative with them one type of stimulation. If this be so, it would follow that the same sense-organ or the same part of a sense-organ would be a means of enabling the mind to perceive two or more specific qualities in an object; and this seems to be the case in regard to presentations of colour, shape and size.

It may, indeed, be contended that it is not true that each one of the sense-organs is sensitive to only one kind of stimulation. For most if not all of

the sense-organs can be stimulated by an electric current, and the same electric stimulus when applied to the ear gives rise to a sensation of sound and when applied to the eye gives rise to a sensation of colour. This fact would seem to have a two-fold bearing upon our problem:

(a) It may be taken to disprove the view that each one of the sense organs is sensitive only to one kind of stimulus and in that case it would seem to suggest that through the eyes sounds should be heard and through the ear colours seen. But this conclusion does not, in truth, follow from the facts of electric stimulation. For, granting that the sense-organs are alike sensitive to electric stimulation and that an electric stimulus is simple and not compounded of different kinds of stimuli, to which the sense-organs are ordinarily sensitive, no more would follow than that each one of the sense-organs is sensitive both to an electric stimulus and to its usually appropriate stimulus issuing from the physical object. It would not follow that it is sensitive to two or more types of stimuli, which under ordinary circumstances, issue from a physical object.

(b) It may be urged that the fact that a sense-organ, when electrically stimulated gives rise to the awareness of a quality corresponding to it, although there is no physical object having that determinate quality acting upon it at that time, shows that the function of the sense-organ is to produce the sense quality in question and not merely to act as an instrument of its apprehension.

But is the evidence for the doctrine of 'the specific energy of the nerve fibres' so strong as it looks? Even Lotze suspected a fallacy in the arguments by which it is supported. "We know," he says, "nothing of waves of sound which produce in the eye a sensation of light, nor of waves of luminiferous ether which produce tones in the ear."<sup>1</sup> And that beyond question is true. The one stimulus alleged to be capable of producing the different sense-presentations and the different stimuli alleged to be capable of producing the same sense presentation are either an electric current, or a mechanical impact that would naturally determine in the organism a modification of electrical equilibrium. So that the question which Bergson raises may well be asked, whether namely, the electrical stimulus does not include different components that go along with sense-presentations of different kinds, and whether the function of each sense-organ is not that of extracting from the whole the component that concerns it. We should then have similar stimuli occasioning the apprehension of similar sense qualities and different

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<sup>1</sup> *Metaphysics*, Vol. II, p. 206, §256.

stimuli occasioning the apprehension of different sense qualities. To speak more precisely, it is difficult to admit, for instance, that applying an electrical stimulus to the tongue would not occasion chemical changes; and these chemical changes are what, in all cases, we apprehend as tastes. So, again, since the physicist has been able to connect what he calls light with electro-magnetic disturbance, we may say, inversely, that what he calls electro-magnetic disturbance *is* light, in this sense, so that it really is what are called waves of light that the optic nerve is affected by when subjected to electrical stimulation.<sup>2</sup> And in that case, the content apprehended would either be an actually present colour in the environment, or a representation of one previously apprehended. It does not seem to me, therefore, that weight can be attached to the argument here in question.

### *Professor Stout's View of the Nature of Sensa*

I have already examined the main reasons which have been advanced in support of the contention that the so-called sense-data are mind-dependent. But there are certain arguments that have been recently put forward by Professor Stout, in various papers and essays, with which we are now perhaps in a better position to deal than we should have been at an earlier stage of our discussion.

First of all, let us be clear as to what precisely Professor Stout means by the assertion that sensa are mental in character. He certainly does not mean that sensa are states of mind in the same sense as believing, doubting, willing, and so on, are. "Sensuous impressions... and sensory images," he writes, "are sharply distinguished from such ways of being conscious as supposing, believing, desiring, hoping, fearing and willing."<sup>3</sup> He draws, in fact, a distinction between being subjective and being psychical. Acts of mind, such as believing and judging are both psychical and subjective, while presentations are psychical but not subjective. Presentations "exist only in being experienced and yet belong to the objective side of the subject-object relation."<sup>4</sup> Indeed, so strenuous is he in insisting upon this distinction that he goes so far as to say that "we have no right to regard them (*i.e.*, presentations) as mental in any sense in which what is mental is contrasted with what is material."<sup>5</sup> Elsewhere he speaks of presentations as being 'immediately experienced' or as being 'modes of immediate experience'; and by 'immediately experienced' he means "what is actually an experience at any given

<sup>2</sup> *Matter and Memory*, pp. 49-50.

<sup>3</sup> *Some Fundamental Points in the Theory of Knowledge*, p. 3.

<sup>4</sup> *Proceedings of the Aristotelian Society*, 1908-09, p. 231.

<sup>5</sup> *Mind*, 1922, p. 386.

moment as distinguished from future, past or possible experiences," just as a headache is while it is being actually felt. In addition, then, to acts and processes, the mind must, according to Professor Stout, be regarded as comprising (a) sensations, whether organic or those of the special senses, and (b) images.

Let us look first at the criteria to which Professor Stout points for determining whether any given entity is mental or physical. "Psychical or mental existence will," he writes, "consist in whatever so belongs to the constitution of a mind that change in it is *eo ipso* change in the mind and that if the mind ceased to exist, it would *eo ipso* cease to exist."<sup>6</sup> Are these sufficient criteria? The second alone is plainly inadequate. For it may well be the case that an entity may cease to exist when the mind which apprehends it ceases to exist and yet not be such as can be legitimately regarded as being a part of the apprehending mind in question. It is necessary to distinguish between being mental and being mind-dependent. If X be an entity which ceases to exist when M, the mind which apprehends it, ceases to exist, it does not necessarily follow that X must be mental. And *sensa* are a case in point. It may well be the case that *sensa* are mind-dependent, but that they are not, on that account, psychical facts. Furthermore, it may be true that an entity is existentially dependent on the physical thing the apprehending mind, and certain appropriate physical conditions in the region between the physical thing and the mind, *e.g.*, a luminiferous ether, air and sense organs, so that it will cease to exist when either of these conditions is absent. And, as regards normal *sensa*, at any rate, Professor Stout holds that they are produced by the action of physical things upon the mind. If that be so, a *sensum* will cease to exist when any of the physical conditions which is instrumental in producing it ceases to exist. And then, according to the argument, there would be just as much reason for saying that *sensa* are physical existents as for saying that they are psychical. Consider, now, the first criterion. It may be stated as follows: If an entity X be so related to M, a mind, that whenever X acquires any new characteristic (say) *c*, M acquires a corresponding characteristic (say) *q*, then X must be mental. It is certainly true that if these conditions are fulfilled one possibility is that X is a part of M. But that is not the only possibility. The notion of 'change in the mind' is ambiguous. Suppose, for instance, that I am visually apprehending a physical thing, which changes gradually as I am looking at it. Then, the change in the physical thing will be accompanied by a corresponding change in the content apprehended by the mind; and that will,

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<sup>6</sup> *Proceedings of the Aristotelian Society*, 1908-09, p. 227.

in a sense, be change in the mind itself. But, from this, it obviously does not follow that what we have taken to be a physical thing must in fact be mental. I conclude, therefore, that the criteria relied upon by Professor Stout for determining whether an entity is mental or physical are inadequate.

I refer to this matter because it seems to me that Professor Stout not seldom assumes that if an entity ceases to exist when the apprehending mind ceases to exist it must be mental in the sense of being a part or constituent of the mind. For instance, he is fond of pointing out that a toothache or a headache, while it is felt, is immediately experienced and "is something, which exists only in being experienced." "If our existence as conscious beings were annihilated, it would *eo ipso* disappear whatever might happen to our body"<sup>7</sup> And he seems to imply (a) that a headache is undoubtedly mental and (b) that it is mental because it exists only in being experienced. In other words, he seems to hold that all entities which exist in being experienced are *ipso facto* mental. Hence one of his arguments would take this form; Sensations like headaches or toothaches are mental, because they exist only in being experienced. Sensa exist only in being experienced, and are, therefore, mental.<sup>8</sup>

Professor Stout is certainly not unaware of the difficulties that beset his view. He fully realises the awkwardness of supposing that red and green and extended objects are literally parts of the mind. He is faced with the same difficulty as that which faced Berkeley in regard to the contention that the *esse* of sensible things is *percipi*.<sup>9</sup> But he thinks apparently that the difficulty can be lightened by a change of terminology. "Though we cannot properly speak of a sense-presentation as green or yellow we may distinguish sensations of green and sensations of yellow."<sup>10</sup> And the difficulty is further mitigated, he thinks, by a consideration of images and dream experiences. Images are coloured and extended and yet we do not feel any hesitation in supposing that they are in the mind. Why, then, should *sensa* which are coloured and extended not exist in the mind after the same manner? The suggestion is plausible enough. But, instead of concluding that it removed the difficulty in the way of regarding *sensa* as mental existents, one may doubt whether the status that common-sense unreflectingly accords to images can be, in truth, upheld. This is no place for entering upon a

<sup>7</sup> *Ibid.*, 1908-09, p. 231.

<sup>8</sup> Cf. *ibid.*, p. 231.

<sup>9</sup> Cf. *Principles of Human Knowledge*, 49.

<sup>10</sup> *Aristotelian Society's Proceedings*, 1908-09, p. 236.

discussion of the nature of images; but there are good grounds for holding that images are not mental existents or indeed existents of any kind.<sup>11</sup>

There is, however, another line of consideration which, as Professor Stout thinks, forces us to regard *sensa* as mental existents. In the first place, it is certain "that what we call the colour of the external thing cannot be simply identified with that which is existentially present to consciousness, when someone looks at it."<sup>12</sup> For "if presentation-yellow (when one is, for example, perceiving a buttercup) is taken to be, by itself, identical with the yellow of the object, then, since the presentation-yellow may vary indefinitely for different percipients and for the same percipient under different conditions there must be a corresponding multiplicity of different yellows really belonging to the object."<sup>13</sup> In the second place, sense-presentations are private and incommunicable experiences of conscious individuals, while physical things are public and can be apprehended by more persons than one. And in the third place, the facts indicated by what is called 'the specific energy of the nerve-fibres' show that the general nature of a sense-presentation depends not so much on the nature of the stimulus as on the structure of the sense-organs and their nerve-connexions. All these considerations go to prove, so Professor Stout argues, that *sensa* are not physical existents.

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<sup>11</sup> "I submit, then, that we may fairly take the ways in which dreams are fabricated as a clue to what happens in the formation of 'images' strictly so called in normal waking experience. In each of the instances just cited what happens is clearly analogous to what we noted as happening in the case of a child gazing at a mass of fleecy clouds, or in that of the boy Abraham on the occasion of the night-journey with his sister. And I would invite the reader to compare the instances I have given of dream imagery in this section with the instances given in the previous section of imagery in the waking life. In point of fact, neither dream experiences nor the working of imagination in the waking life can be understood except by reference to what takes place in normal perception. In normal perception, the sense-content directly apprehended serves as the pivot around which we group a mass of revived factors and concepts, interpreting the whole in objective terms. The standard of interpretation is our normal experience. The data presented will be misinterpreted if either they are themselves apprehended with insufficient precision or if the circumstances attending the apprehension of them are in any way unusual. If the quantity of the content presented be too small, if its elements be confused, if the time available for discrimination of those elements be excessively brief, it must be a matter more or less of haphazard or chance what specific interpretation be put upon the data in question. And considerations such as these make manifest, I think, (a) how impossible it is to draw any fixed line between what we call imagination and what we call perception, and (b) the probability that in imagination as in perception there is actually given sense-material, for the most part vaguely and confusedly apprehended, and often, no doubt, intra-organic in nature, which serves as the pivot around which the suggested 'imagery' is grouped and hence interpreted in objective fashion." Professor Hicks in *British Journal of Psychology*, Vol. XV, Part II, pp. 143, 144.

<sup>12</sup> *Proceedings of the Aristotelian Society*, 1908-09, p. 232.

<sup>13</sup> *Some Fundamental Points in the Theory of Knowledge*, p. 28.



I have already dealt with these considerations and Professor Stout himself agrees that they are insufficient for proving that *sensa* are mental. So far as these arguments are concerned, he holds "this to be far the most natural conclusion, namely, that they (*i.e.*, *sensa*) are neither mental nor physical."<sup>14</sup> But he thinks that there are positive reasons for supposing that they are psychical existents; and to one of these on which he lays special emphasis I now turn.

He urges, namely, that retention and revival are inexplicable, unless we assume that *sensa* are psychical existents.<sup>15</sup> The argument may be stated in some such way as the following:—Take such a perceptual situation as that in which I am ordinarily said to be visually perceiving a book. Then, on the view which Professor Stout is resisting, the *sensum* is actually a part of the surface of the book and the function of the mind is simply that of apprehending it. That is to say, it is the act of apprehension which alone belongs to the substance of the mind, while that which is apprehended does not belong to it, but to an entirely different substance, namely the book. "The mind on this view is merely an activity, which skips and hops from one external object to another, but its own nature remains unmodified by the external things to which it is successively directed."<sup>16</sup> How, then, on this view, is it possible for the conscious subject to remember the book? For remembering involves retention and revival of previous experiences; and only that which belongs to the substance of the mind can be retained or revived. On the hypothesis in question, all that belongs to the substance of the mind are the mental acts of apprehension. We should, therefore, never be able to recall the features of the book. In fact, all memory situations, all experience which involves in the smallest degree retention or revival of previous experiences, would be impossible. Not only so. We could not remember even our own previous mental acts. For there would be no mark by which we could distinguish one mental act from another. In the 'apprehension of red' and the 'apprehension of blue', what is mental is *ex hypothesi*, simply the act of apprehending; and though the acts are numerically different, yet they are the same in kind in both cases. The two situations are different in virtue of the different objects, upon which the same kind of act is, so to speak, directed. Indeed, it would be hard to understand how a *mere* act of apprehension could be so much as retained in the mind. For an act which is divorced from its object is just nothing at

<sup>14</sup> *Proceedings of the Aristotelian Society*, 1908-09, p. 241.

<sup>15</sup> Cf. *ibid.*, p. 246.

<sup>16</sup> *Ibid.*, p. 246.

all; and yet, on the view under consideration, it would seem that it is only such an act that can be either retained or revived. On the other hand, if we assume that the *sensum* is psychical, the difficulty, so Professor Stout thinks, disappears, seeing that then the mental act would be retained or revived together with the *sensum*.

Professor Stout's solution leaves open two possibilities (a) the *sensum* may be psychical but not a part of the mental act through which it is apprehended; (b) the *sensum* may be a part of the mental act.

(a) Would Professor Stout's difficulty be in any way diminished *merely* by supposing that the *sensum* is psychical in character? If the *sensum* be not a part of the mental act of apprehension, the latter would remain equally empty though the former is psychical in character; and it would follow, that acts of apprehension, at any rate, could never be revived. The only advantage gained by supposing that *sensa* are mental would in that case, be that their retention or revival might be conceivably explicable. But we should be landed with the paradoxical result that while we might, according to this view, remember a book which we had previously seen, we should not be able to remember the fact that we had previously seen it.

(b) We are, therefore, left with the other alternative of supposing that the *sensum* is not only psychical in nature but is a part of the mental act in and through which it is apprehended. This, from the passage just quoted, would seem to be implied in the contention that the mind is modified by 'the external things, to which it is successively directed'; the modification, that is to say, would seem to be by way of addition of *sensa* to the successive mental acts, in and through which physical things are apprehended. But is this a tenable view? It is often argued that the content thought about cannot be separated from the thinking of it, or the thing perceived from the act in and through which it is perceived. The latter was, of course, the well-known contention of Berkeley. The main ground of this argument would appear to be that, unless we recognise that what we apprehend is part of the apprehension we shall find ourselves abstracting what we apprehend from the apprehension and then the act of apprehension will become empty. It is, of course, a notorious fact that there is no such thing as a *bare* act of apprehension, an act which is not directed upon anything in particular. Apprehension must, by the very nature of the case, be apprehension of *something*. But it does not follow, in the least, that the 'something', which is apprehended or thought of must be either a part of the act through which it is apprehended, or be inseparable from that act. If we think of the blue sky, the blue sky does not thereby become a part of our

act of thinking, nor does the blue sky cease to exist if we cease to think of it. It is also clear that, in thinking of blue, the mental act does not itself become blue. And yet that would appear to be precisely what the contention we are discussing virtually involves.

Assuming, then, that the difficulty on which Professor Stout lays stress is a genuine difficulty, the solution of it which he offers would seem to be either inadequate or indefensible. But is the supposed difficulty a genuine difficulty? Professor Stout thinks it is because he is all the while assuming that two acts of sensuous apprehension cannot be qualitatively different unless the *sensa* are somehow or other added on to them; and, no doubt, unless acts of apprehension are qualitatively different the fact of memory would appear to be inexplicable. This assumption is, however, by no means inevitable. We must distinguish between the content apprehended and the content or 'what' of the act of apprehension itself. I have urged that the content apprehended is so much of the total content of the object as is apprehended at any particular moment. What will be the content of the act of apprehension? Not awareness merely, but awareness of the content in question, or, adopting the language now so much in vogue, awareness of the sense-datum. If I am perceiving a penny, the content apprehended will be so much of the visual features of the penny as are apprehended, while the content of the act of thus perceiving it will be the *awareness of those* features and not bare awareness as Professor Stout seems to assume. It is clear, likewise, that two acts of apprehension will not only be numerically distinct but also qualitatively distinct. For, whenever two different objects, say X and Y are being apprehended, the content of the act of apprehension will be, in one case, the awareness of X, and, in the other case, the awareness of Y. And it is *this* content of the act of apprehension which is capable of being retained or revived.

It may, however, be objected that, on our own showing, two mental acts will be qualitatively distinct only when the objects upon which they are directed are qualitatively different. Yet, supposing that on two occasions we thought of the same entity X, then it would follow that the two mental acts, though numerically distinct, are qualitatively the same. Hence, even if the possibility of their being revived be admitted, yet the fact that we are able to remember that we thought of X on two different occasions would remain inexplicable. And we find that, as a matter of fact, we do remember different occasions on which we thought of the same thing. In the first place, however, it is to be noted that if this objection be valid at all it is equally applicable to Professor Stout's view. For it does not rule out the possibility of two mental acts of apprehension being qualitatively similar though

numerically distinct. But, in the second place, the objection rests, I think, on a misapprehension. It is true that if we could have a series of successive mental acts the members of which are all qualitatively similar, there would be nothing to distinguish any one of them from any other; and then it would be difficult to see how we could remember or recognise any one specific member of the series. As a matter of fact, however, in actual experience, we never do get such a series of successive mental acts all qualitatively similar to one another. Not only so. There is some positive evidence to which we may appeal. If we think several times upon the same thing we should, according to the view I am taking, expect to find that in general one would remember not the several specific mental acts of thinking but the content thought about which in all cases is the same. And this is exactly what we do find. For instance, we do not, as a rule, remember the specific mental acts through which we have thought about the theorems of Euclidean Geometry; we remember the theorems themselves.

When we say that the content of a mental act is not mere awareness but awareness of (say) a specific blue, it should be noted that the relation indicated by the word 'of' is unique. It certainly does not indicate that the awareness and the blue are two parts of a whole which is the mental act. It is perhaps natural enough to suppose that in the content of the mental act blueness must enter as a factor, since the phrase awareness of blue seems to contain blue as one of its constituents; and this would involve that the blue, which is the object of the awareness, is somehow tacked on to the awareness, so that they form together the content of the mental act. On this view, the blue and other sense-qualities would be retained and revived and associated with each other; that is to say, they would be related to the apprehending mind as parts to the whole—a *prima facie* absurd view.

# SOME RESULTS AND OPERATIONAL RELATIONS INVOLVING FUNCTIONS ASSOCIATED WITH BESSEL FUNCTIONS

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THE object of the present paper is to investigate certain results involving Bessel functions and those functions associated with it like ber and bei functions, Costello's Bessel product functions of the first kind, etc. The operational representations of certain functions associated with the Bessel functions, such as Struve function and Lommel function are also given. The methods of operational calculus are freely used to derive all the results. This indicates the heuristic value of the operational calculus. For the theorems and results used in this paper reference may be made to the previous papers of the author.

I. Now<sup>1</sup>

$$\frac{t}{t-z} = t J_0(z) O_0(t) + 2 \sum_{n=1}^{\infty} J_n(z) t O_n(t)$$

where  $O_n(t)$  is Neumann's polynomial. If we replace  $t$  by  $p$  and interpret the resulting equation with the help of the operational representations

$$e^{xz} \doteq \frac{p}{p-z}$$

$$p O_n(p) \doteq \cosh [n \sinh^{-1} x]$$

we will obtain

$$e^{xz} = J_0(z) + 2 \sum_{n=1}^{\infty} J_n(z) \cosh [n \sinh^{-1} x] \quad (1.1)$$

If we change  $z$  into  $-z$  and use the definition of hyperbolic functions we get

$$\cosh xz = J_0(z) + 2 \sum_{n=1}^{\infty} J_{2n}(z) \cosh [2n \sinh^{-1} x] \quad (1.2)$$

$$\sinh xz = 2 \sum_{n=0}^{\infty} J_{2n+1}(z) \cosh [(2n+1) \sinh^{-1} x] \quad (1.3)$$

Changing  $z$  into  $iz$  and using  $J_n(iz) = i^n I_n(z)$  we get

$$\cos xz = I_0(z) + 2 \sum_{n=1}^{\infty} (-1)^n I_{2n}(z) \cosh [2n \sinh^{-1} x] \quad (1.4)$$

$$\sin xz = 2 \sum_{n=0}^{\infty} (-1)^n I_{2n+1}(z) \cosh [(2n+1) \sinh^{-1} x] \quad (1.5)$$

From these equations we will obtain results involving Costello's Bessel product functions of the first kind. For this, first we replace  $z$  by  $\frac{2}{s}$  in (1.4) and (1.5) and interpret the transformed results with the help of the following operational relations  $t \doteq \frac{1}{s}$

$${}^a\text{ber} [2\sqrt{2xt}] \doteq \cos \frac{2x}{s}; \text{bei} [2\sqrt{2xt}] \doteq \sin \frac{2x}{s}$$

$${}^4\chi_n^{(b)} [2\sqrt{t}] = \text{ber}_n^2 (2\sqrt{t}) + \text{bei}_n^2 (2\sqrt{t}) \doteq I_n \left( \frac{2}{s} \right) \quad (1.6)$$

we get the results

$$\begin{aligned} \text{ber} [2\sqrt{2xt}] &= \chi_0^{(b)} [2\sqrt{t}] \\ &+ 2 \sum_{n=1}^{\infty} (-)^n \chi_{2n}^{(b)} (2\sqrt{t}) \cosh (2n \sinh^{-1} x) \end{aligned} \quad (1.7)$$

and

$$\text{bei} (2\sqrt{2xt}) = 2 \sum_{n=0}^{\infty} (-)^n \chi_{2n+1}^{(b)} (2\sqrt{t}) \cosh [(2n+1) \sinh^{-1} x] \quad (1.8)$$

If on the other hand we replace  $z$  by  $\frac{2}{s}$  in (1.4) and (1.5) and divide the transformed results by  $s$  and then interpret with the help of (1.6) and

$$\begin{aligned} \text{(i) if } f(s) &\doteq h(t), \quad \frac{f(s)}{s} \doteq \int_0^t h(u) du \\ \text{(ii)} \quad \sqrt{t} W_n^{(b)} (2\sqrt{t}) &\doteq \frac{1}{s} I_n \left( \frac{2}{s} \right) \quad R(n) > -2 \end{aligned} \quad (1.9)$$

we get

$$\begin{aligned} \int_0^t \text{ber} [2\sqrt{2xu}] du &= \sqrt{t} W_0^{(b)} [2\sqrt{t}] \\ &+ 2 \sum_{n=1}^{\infty} (-)^n \sqrt{t} W_{2n}^{(b)} [2\sqrt{t}] \cosh [2n \sinh^{-1} x] \end{aligned} \quad (1.10)$$

and

$$\begin{aligned} \int_0^t \text{bei} [2\sqrt{2xu}] du \\ = 2 \sum_{n=0}^{\infty} (-)^n \sqrt{t} W_{2n+1}^{(b)} [2\sqrt{t}] \cosh [(2n+1) \sinh^{-1} x] \end{aligned} \quad (1.11)$$

Similarly using the operational representations of  $\frac{1}{\sqrt{t}} Z_{2n+1}^{(b)} (2\sqrt{t})$  and  $V_n^{(b)} (2\sqrt{t})$  we get

$$\begin{aligned} & \frac{d}{dt} \text{bei} [2\sqrt{2xt}] \\ &= 2 \sum_{n=0}^{\infty} \frac{(-)^n}{\sqrt{t}} Z_{2n+1}^{(2)} (2\sqrt{t}) \cosh [(2n+1) \sinh^{-1} x] \quad (1.12) \end{aligned}$$

and

$$\begin{aligned} & \frac{d^2}{dt^2} \text{bei} [2\sqrt{2xt}] \\ &= 2 \sum_{n=0}^{\infty} (-)^n V_{2n+1}^{(2)} (2\sqrt{t}) \cosh [(2n+1) \sinh^{-1} x] \quad (1.13) \end{aligned}$$

Again if we put  $z = -\frac{a}{q}$  in (1.1) and interpret with the help of

$$y \doteq \frac{1}{q}; J_0(2\sqrt{axy}) \doteq e^{-\frac{ax}{q}}; J_n\left(-\frac{a}{q}\right) = (-)^n J_n\left(\frac{a}{q}\right)$$

and

$$J_n(\sqrt{2ay}) I_n(\sqrt{2ay}) \doteq J_n\left(\frac{a}{q}\right) \quad (1.14)$$

we have by replacing  $x$  by  $\sinh t$  the relation

$$\begin{aligned} J_0[2\sqrt{ay} \sinh t] &= J_0(\sqrt{2ay}) I_0(\sqrt{2ay}) \\ &+ 2 \sum_{n=1}^{\infty} (-)^n J_n(\sqrt{2ay}) I_n(\sqrt{2ay}) \cosh nt \quad (1.15) \end{aligned}$$

From this we get substituting for  $\sinh t$  and  $\cosh nt$  their operational representations the result

$$\begin{aligned} J_0\left[2\sqrt{\frac{ays}{s^2-1}}\right] &= J_0[\sqrt{2ay}] I_0(\sqrt{2ay}) \\ &+ 2 \sum_{n=1}^{\infty} \frac{(-)^n s^2}{s^2-n^2} J_n[\sqrt{2ay}] I_n[\sqrt{2ay}]. \quad (1.16) \end{aligned}$$

Finally if we put  $z = \frac{1}{s}$  in (1.5), multiply the resulting equation by  $e^{-1/s}$  and then interpret using the product theorem, the operational relations (1.6) and  $e^{-1/s} I_n\left(\frac{1}{s}\right) \doteq J_n^2(\sqrt{2t})$  we obtain

$$\begin{aligned} & \int_0^t J_0[2\sqrt{t-\xi}] \frac{d}{d\xi} \text{bei}(2\sqrt{\xi x}) d\xi \\ &= 2 \sum_{n=1}^{\infty} (-)^n J_{2n+1}^2(\sqrt{2t}) \cosh [(2n+1) \sinh^{-1} x] \quad (1.17) \end{aligned}$$

II. In the relation

$$\sin(z \sin x) = 2 \sum_{n=0}^{\infty} J_{2n+1}(z) \sin(2n+1)x$$

replace  $z$  by  $\frac{1}{\beta}$  and interpret with the help of (1.14), (1.6) and

$$\frac{a^n}{\Gamma(1+n)} \doteq \frac{1}{g^n}$$

we get

$$\text{bei } [2\sqrt{a} \sin x] = 2 \sum_{n=0}^{\infty} J_{2n+1}(\sqrt{2a}) I_{2n+1}(\sqrt{2a}) \sin(2n+1)x \quad (2.1)$$

Similarly from the result

$$\cos \left[ z \sin \frac{x}{2} \right] = J_0(z) + 2 \sum_{n=1}^{\infty} J_{2n}(z) \cos nx$$

we obtain

$$\begin{aligned} \text{ber } \left[ 2 \sqrt{a} \sin \frac{x}{2} \right] &= J_0[\sqrt{2a}] I_0[\sqrt{2a}] \\ &+ 2 \sum_{n=1}^{\infty} J_{2n}[\sqrt{2a}] I_{2n}[\sqrt{2a}] \cos nx \end{aligned} \quad (2.2)$$

Putting  $x = \frac{\pi}{2}$  in (2.1) and  $x = \pi$  in (2.2) we have

$$\text{bei}(2\sqrt{a}) = 2 \sum_{n=0}^{\infty} (-)^n J_{2n+1}(\sqrt{2a}) I_{2n+1}(\sqrt{2a}) \quad (2.3)$$

$$\text{ber}[2\sqrt{a}] = J_0[\sqrt{2a}] I_0[\sqrt{2a}] + 2 \sum_{n=1}^{\infty} (-)^n J_{2n}[\sqrt{2a}] I_{2n}[\sqrt{2a}] \quad (2.4)$$

If we put  $a = \frac{x^2}{2}$  in (2.3) and (2.4) we will get results due to Mitra.<sup>5</sup> Further results from (2.1) and (2.2) can be obtained if we substitute for the trigonometrical functions of  $x$  their operational representations. Those will be

$$\begin{aligned} \text{bei} \left[ 2 \sqrt{\frac{ap}{1+p^2}} \right] \\ = 2p \sum_{n=0}^{\infty} \frac{2n+1}{p^2 + (2n+1)^2} J_{2n+1}(\sqrt{2a}) I_{2n+1}(\sqrt{2a}) \end{aligned} \quad (2.5)$$

and

$$\begin{aligned} \text{ber} \left[ 2 \sqrt{\frac{ap}{1+p^2}} \right] \\ = J_0(\sqrt{2a}) I_0(\sqrt{2a}) + 2 \sum_{n=1}^{\infty} \frac{p^2}{p^2 + 4n^2} J_{2n}(\sqrt{2a}) I_{2n}(\sqrt{2a}) \end{aligned} \quad (2.6)$$

III. Lastly if we add the two results

$$\frac{1}{t+z} = J_0(z) O_0(t) - 2 J_1(z) O_1(t) + 2 J_2(z) O_2(t) \dots$$

and

$$\frac{1}{t-z} = J_0(z) O_0(t) + 2 J_1(z) O_1(t) + 2 J_2(z) O_2(t) \dots$$



and change  $z$  into  $iz$  in the resulting equation we get

$$\frac{t}{t^2 + z^2} = I_0(z) O_0(t) + 2 \sum_{n=1}^{\infty} (-)^n I_{2n}(z) O_{2n}(t) \quad (3.1)$$

We can transform this by the substitution  $z = \frac{2}{p}$  into

$$\frac{pt}{4 + p^2 t^2} = \frac{1}{p} I_0\left(\frac{2}{p}\right) O_0(t) + 2 \sum_{n=1}^{\infty} (-)^n \frac{1}{p} I_{2n}\left(\frac{2}{p}\right) O_{2n}(t)$$

This gives after interpretation with the help of (1.9) the result

$$\begin{aligned} \frac{1}{2\sqrt{x}} \sin \frac{2x}{t} &= W_0^{(b)}(2\sqrt{x}) O_0(t) \\ &+ 2 \sum_{n=1}^{\infty} (-)^n W_{2n}^{(b)}(2\sqrt{x}) O_{2n}(t) \end{aligned} \quad (3.2)$$

IV. We will now obtain the operational representations of some functions. First let us take the function<sup>1</sup>  $L_\nu(x)$  defined by

$$L_\nu(x) = \sum_{r=0}^{\infty} \frac{(\frac{1}{2}x)^{r+\frac{1}{2}}}{\Gamma(r+\frac{1}{2}) \Gamma(\nu+r+\frac{1}{2})}$$

Change  $x$  into  $\sqrt{x}$  in this, multiply by  $x^{\frac{\nu}{2}}$  and then change  $x$  in the resulting equation into  $xy$  and divide by  $y^\nu$ , we get

$$\left(\frac{x}{y}\right)^{\frac{\nu}{2}} L_\nu(\sqrt{xy}) = \sum_{r=0}^{\infty} \frac{x^{r+\frac{1}{2}} y^{r+\frac{1}{2}}}{2^{r+\frac{1}{2}} \Gamma(r+\frac{1}{2}) \Gamma(\nu+r+\frac{1}{2})}$$

Substitute for  $x$  and  $y$  on the right hand side their operational representations. We have

$$\text{if } x \doteq \frac{1}{p} \text{ and } y \doteq \frac{1}{q}$$

$$\begin{aligned} \left(\frac{x}{y}\right)^{\frac{\nu}{2}} L_\nu[\sqrt{xy}] &\doteq \frac{1}{2^{\nu+1}} \sum_{r=0}^{\infty} \frac{1}{2^{2r} p^{r+\frac{1}{2}} q^{r+\frac{1}{2}}} \\ &\doteq \frac{1}{2^{\nu+1} p^{\nu+\frac{1}{2}} q^{\frac{1}{2}}} \left(1 - \frac{1}{4pq}\right)^{-1} \\ &\doteq \frac{1}{2^{\nu-1} p^{\nu-\frac{1}{2}}} \frac{\sqrt{q}}{[4pq-1]} \end{aligned} \quad (4.1)$$

Similarly we can obtain the operational representation of  $\left(\frac{x}{y}\right)^{\frac{\nu}{2}} H_\nu(\sqrt{xy})$  where<sup>1</sup>

$$H_\nu(x) = \sum_{r=0}^{\infty} \frac{(-)^r (\frac{1}{2}x)^{r+\frac{1}{2}}}{\Gamma(r+\frac{1}{2}) \Gamma(\nu+r+\frac{1}{2})}$$

Following on the lines similar to the above we get

$$\left(\frac{x}{y}\right)^{\nu} H_{\nu}(\sqrt{xy}) \doteq 2^{\nu-1} p^{\nu-\frac{1}{2}} \frac{\sqrt{q}}{(1+4pq)} \quad (4.2)$$

We will now obtain the operational representations of Ster and Stei functions from this. For this purpose change  $x$  into  $xi^3$ , we get

$$\begin{aligned} \left(\frac{x}{y}\right)^{\nu} H_{\nu}[\sqrt{xy}i^3] &\doteq 2^{\nu-1} p^{\nu-\frac{1}{2}} \frac{i^{\frac{3}{2}(\nu+1)} \sqrt{q}}{[4pq-i]} \\ &\doteq \frac{\sqrt{q} \exp\left[\frac{3}{2}\pi i(\nu+1)\right]}{2^{\nu-1} p^{\nu-\frac{1}{2}} [4pq-i]} \end{aligned}$$

But

$$\text{Ster}_{\nu} x \pm i \text{stei}_{\nu} x = H_{\nu}(xi^{\pm \frac{3}{2}})$$

Hence

$$\left(\frac{x}{y}\right)^{\nu} [\text{Ster}_{\nu}(\sqrt{xy}) + i \text{Ste}_{\nu}(\sqrt{xy})] \doteq \frac{\sqrt{q} \exp\left[\frac{3}{2}\pi i(\nu+1)\right]}{2^{\nu-1} p^{\nu-\frac{1}{2}} [4pq-i]}$$

Separating into real and imaginary parts, we have

$$\left(\frac{x}{y}\right)^{\nu} \text{Ster}_{\nu} \sqrt{xy} \doteq \frac{4pq \cos \frac{3}{2}(\nu+1)\pi - \sin \frac{3}{2}(\nu+1)\pi}{2^{\nu-1} p^{\nu-\frac{1}{2}} q^{-\frac{1}{2}} (16p^3 q^2 + 1)} \quad (4.3)$$

and

$$\left(\frac{x}{y}\right)^{\nu} \text{Ste}_{\nu} \sqrt{xy} \doteq \frac{4pq \sin \frac{3}{2}(\nu+1)\pi + \cos \frac{3}{2}(\nu+1)\pi}{2^{\nu-1} p^{\nu-\frac{1}{2}} q^{-\frac{1}{2}} (16p^3 q^2 + 1)} \quad (4.4)$$

Now take the associated Lommel function<sup>6</sup>  $\phi_{\mu,\nu}(x)$  defined by

$$\begin{aligned} \phi_{\mu,\nu}(x) &= \\ &= \frac{1}{\frac{3}{2}\mu+3} \sum_{m=0}^{\infty} \frac{(-)^m x^{4m+\frac{3}{2}\mu+2}}{2^{4m} \Gamma\left(\frac{3}{2}+\frac{1}{2}\mu+\frac{1}{2}\nu+m\right) \Gamma\left(\frac{3}{2}+\frac{1}{2}\mu-\frac{1}{2}\nu+m\right)} \end{aligned}$$

where  $\mu \pm \nu \neq$  odd negative integer, and multiply both sides by  $x^{2\nu}$ , change  $x$  into  $xy$  and then divide the resulting equation by  $y^{4\nu}$  we have

$$\begin{aligned} \left(\frac{x}{y}\right)^{2\nu} \phi_{\mu,\nu}(xy) &= \\ &= \frac{1}{\frac{3}{2}\mu+3} \sum_{m=0}^{\infty} \frac{(-)^m x^{4m+\frac{3}{2}\mu+2\nu+2} y^{4m+\frac{3}{2}\mu-2\nu+2}}{2^{4m} \Gamma\left(\frac{3}{2}+\frac{1}{2}\mu+\frac{1}{2}\nu+m\right) \Gamma\left(\frac{3}{2}+\frac{1}{2}\mu-\frac{1}{2}\nu+m\right)} \end{aligned}$$

Now replacing  $x$  and  $y$  by  $x^{\frac{1}{p}}$  and  $y^{\frac{1}{q}}$  and interpreting operationally the right hand side with the help of  $x \doteq \frac{1}{p}$ ,  $y \doteq \frac{1}{q}$  and simplifying we get

$$\left(\frac{x}{y}\right)^{\frac{2}{p}} \phi_{\mu,\nu}[(xy)^{\frac{1}{p}}] \doteq \frac{1}{2^{\frac{3}{2}\mu-1}} \frac{1}{p^{\frac{\mu+\nu-1}{2}} q^{\frac{\mu-\nu-1}{2}} (1+16pq)} \quad (4.5)$$

But<sup>a</sup>

$$s_{\mu,\nu}(\frac{1}{2}x^2) = 2^{2\mu} \phi_{\mu,\nu}(x) \Gamma[\frac{1}{2}(1+\mu+\nu)] \Gamma[\frac{1}{2}(1+\mu-\nu)] \quad (4.6)$$

Hence

$$\begin{aligned} \left(\frac{x}{y}\right)^2 s_{\mu,\nu}(\frac{1}{2}\sqrt{xy}) \\ \div \frac{1}{2^{\mu-1}} \frac{\Gamma[\frac{1}{2}(1+\mu+\nu)] \Gamma[\frac{1}{2}(1+\mu-\nu)]}{p^{\frac{\mu+\nu-1}{2}} q^{\frac{\mu-\nu-1}{2}} (1+16pq)} \end{aligned} \quad (4.7)$$

V. So far we have obtained the operational representations of functions involving two variables. We will now get the operational relations for functions of one variable only. We have the Mejer's Integral<sup>a</sup>

$$\begin{aligned} \int_0^\infty e^{-\xi v^2} \phi_{\mu,\nu}(v) v^{2\lambda+1} dv \\ = \frac{\xi^{-2-\mu-\lambda} \Gamma(2+\mu+\lambda)}{2^{3\mu+4} \Gamma\left(\frac{3}{2}+\frac{\mu}{2}+\frac{\nu}{2}\right) \Gamma\left(\frac{3}{2}+\frac{\mu}{2}-\frac{\nu}{2}\right)} \\ 3 F_2 \left[ 1, \frac{2+\mu+\lambda}{2}, \frac{3+\mu+\lambda}{2}; \frac{3+\mu+\nu}{2}, \frac{3+\mu-\nu}{2}; -\frac{1}{4\xi^3} \right] \end{aligned}$$

If we put in this  $v^2 = x$  and  $\xi = p$  and simplify we get

$$\begin{aligned} p \int_0^\infty e^{-px} \phi_{\mu,\nu}(\sqrt{x}) x^\lambda dx \\ = \frac{\Gamma(2+\mu+\lambda) 3 F_2 \left[ 1, \frac{2+\mu+\lambda}{2}, \frac{3+\mu+\lambda}{2}; \frac{3+\mu+\nu}{2}, \frac{3+\mu-\nu}{2}; -\frac{1}{4p^3} \right]}{2^{3\mu+3} p^{1+\mu+\lambda} \Gamma\left(\frac{3}{2}+\frac{1}{2}\mu+\frac{1}{2}\nu\right) \Gamma\left(\frac{3}{2}+\frac{1}{2}\mu-\frac{1}{2}\nu\right)} \end{aligned}$$

Hence we get

$$\begin{aligned} x^\lambda \phi_{\mu,\nu}(\sqrt{x}) \\ \div \frac{\Gamma(2+\mu+\lambda) 3 F_2 \left[ 1, \frac{2+\mu+\lambda}{2}, \frac{3+\mu+\lambda}{2}; \frac{3+\mu+\nu}{2}, \frac{3+\mu-\nu}{2}; -\frac{1}{4p^3} \right]}{2^{3\mu+3} p^{1+\mu+\lambda} \Gamma\left(\frac{3}{2}+\frac{1}{2}\mu+\frac{1}{2}\nu\right) \Gamma\left(\frac{3}{2}+\frac{1}{2}\mu-\frac{1}{2}\nu\right)} \end{aligned} \quad (5.1)$$

Using (4.6) we have

$$\begin{aligned} x^\lambda s_{\mu,\nu}(\frac{1}{2}x) \div \frac{\Gamma(2+\mu+\lambda)}{2^{\mu+1} p^{1+\mu+\lambda} [(\mu+1)^2 - \nu^2]} \\ 3 F_2 \left[ 1, \frac{2+\mu+\lambda}{2}, \frac{3+\mu+\lambda}{2}; \frac{3+\mu+\nu}{2}, \frac{3+\mu-\nu}{2}; -\frac{1}{4p^3} \right] \end{aligned} \quad (5.2)$$

The results (5.1) and (5.2) are true provided  $R(\mu+\lambda) > -2$  and  $R(\mu) - R(\nu) > -3$ .

The following are the particular cases of (5.1) :—

(i) Put  $\lambda = \frac{1}{2} = \nu$  we have after using the duplication formula of the gamma functions

$$\begin{aligned} \sqrt{x} \phi_{\mu, \frac{1}{2}}(\sqrt{x}) &\doteq \frac{1}{2^{2\mu+\frac{1}{2}}} \cdot \frac{1}{p^{\mu+\frac{1}{2}}} \cdot \frac{1}{\sqrt{\pi}} {}_1F_0\left[1; -\frac{1}{4p^2}\right] \\ &\doteq \frac{1}{\sqrt{\pi} 2^{2\mu+\frac{1}{2}} p^{\mu+\frac{1}{2}} (1+4p^2)} \quad R(\mu) > -\frac{5}{2} \end{aligned} \quad (5.3)$$

(ii) Put  $\mu = \alpha - \beta - 2$ ,  $\nu = \lambda = 1 - \alpha - \beta$ , and use the duplication formula we get

$$\begin{aligned} x^{1-\alpha-\beta} \phi_{\alpha-\beta-2, 1-\alpha-\beta}(\sqrt{x}) \\ \doteq \frac{\Gamma(\frac{1}{2}-\beta)}{\sqrt{\pi} \Gamma(\alpha)} 2^{2\alpha-\beta-3} p^{2\beta} {}_2F_1\left[1, \frac{1}{2}-\beta; \alpha; -\frac{1}{4p^2}\right] \end{aligned} \quad (5.4)$$

VI. McLachlan<sup>4</sup> has obtained the operational forms of Costello's Bessel product functions of the type

$$\sqrt{x} W_\nu^{(b)}(2\sqrt{x}) \doteq \frac{1}{p} I_\nu\left(\frac{2}{p}\right) \quad R(\nu) > -2$$

$$\frac{Z_\nu^{(b)}(2\sqrt{x})}{\sqrt{x}} \doteq p I_\nu\left(\frac{2}{p}\right) \quad R(\nu) > 0$$

$$X_\nu^{(b)}(2\sqrt{x}) \doteq I_\nu\left(\frac{2}{p}\right) \quad R(\nu) > -1$$

$$V_\nu^{(b)}(2\sqrt{x}) \doteq p^2 I_\nu\left(\frac{2}{p}\right) \quad R(\nu) > 1$$

Humbert<sup>7</sup> has obtained the form  $X_n^{(b)}[-2\sqrt{2ix}] \doteq (-)^{\frac{n}{2}} J_n\left(\frac{4}{p}\right)$ . We will now obtain the forms for the functions

$$X_n^{(b)}(-\sqrt{i}x), X_n^{(b)}(2x), x^{-1} Z_n^{(b)}\left(\frac{x}{\sqrt{2}}\right), V_n^{(b)}\left(\frac{x}{\sqrt{2}}\right), \text{ and } x W_n^{(b)}\left(\frac{x}{\sqrt{2}}\right).$$

For this we use the theorem :

$$\text{If, } f(p) \doteq h(x), \quad h(x^2) \doteq \frac{p}{\sqrt{\pi}} \int_0^\infty e^{-\frac{p^2 s^2}{4}} f\left(\frac{1}{s^2}\right) ds$$

Applying this to  $X_n^{(b)}[-2\sqrt{2ix}]$  we get

$$\begin{aligned} X_n^{(b)}[-2\sqrt{2ix}] &\doteq \frac{p}{\sqrt{\pi}} \int_0^\infty e^{-\frac{p^2 s^2}{4}} (-)^{\frac{n}{2}} J_n(4s^2) ds \\ &\doteq \frac{p(-)^{\frac{n}{2}}}{4\sqrt{\pi}} \int_0^\infty e^{-\frac{p^2 t}{16}} \frac{J_n(t)}{\sqrt{t}} dt \\ &\doteq \frac{(-)^{\frac{n}{2}} 2^{2n} \Gamma(n+\frac{1}{2})}{\sqrt{\pi} p^{2n} \Gamma(n+1)} \\ &\quad 2F_1\left[\frac{1}{2}(n+\frac{1}{2}), \frac{1}{2}(n+\frac{1}{2}); n+1; -\left(\frac{16}{p^2}\right)^2\right] \end{aligned}$$

or

$$X_n^{(b)} [x e^{\frac{p^2 x}{4}}] \doteq \frac{(-)^n \Gamma(n + \frac{1}{2})}{\sqrt{n} p^{2n} \Gamma(n+1)} {}_2F_1 \left[ \frac{1}{2} (n + \frac{1}{2}), \frac{1}{2} (n + \frac{3}{2}); n+1; -\frac{4}{p^2} \right] \quad (6.1)$$

using the integral (2) p. 385 B.F. and changing  $x$  into  $\frac{x}{2\sqrt{2}}$  with the corresponding change in  $p$ .

Apply the theorem to  $X_n^{(b)} (2\sqrt{x})$  we have

$$\begin{aligned} X_n^{(b)} (2x) &\doteq \frac{p}{\sqrt{\pi}} \int_0^\infty e^{-\frac{p^2}{4} s^2} I_n (2s^2) ds \\ &\doteq \frac{p}{2\sqrt{2\pi}} \int_0^\infty e^{-\frac{p^2}{8} x} \frac{I_n (x)}{\sqrt{x}} dx \\ &\doteq \frac{p}{2\pi} Q_{n-2} \left( \frac{p^2}{8} \right) \quad R(n) > -1 \end{aligned} \quad (6.2)$$

using the integral (5) p. 387 B.F. Similarly applying the theorem successively to  $x^{-\frac{1}{2}} Z_n^{(b)} (2\sqrt{x})$ ,  $V_n^{(b)} (2\sqrt{x})$  and  $\sqrt{x} W_n^{(b)} (2\sqrt{x})$  and using the integral (6), p. 388 B.F. we get after transforming the results obtained by changing  $x$  into  $\frac{x}{2\sqrt{2}}$ , so that  $p$  changes into  $2\sqrt{2}p$ , the relations

$$x^{-\frac{1}{2}} Z_n^{(b)} \left[ \frac{x}{\sqrt{2}} \right] \doteq -\frac{p}{\pi} Q_{n-1}^{-1} (p^2) (p^4 - 1)^{\frac{1}{2}} \quad R(n) > \frac{1}{2} \quad (6.3)$$

$$V_n^{(b)} \left[ \frac{x}{\sqrt{2}} \right] \doteq \frac{4\sqrt{2}p}{\pi} Q_{n-2}^{-2} (p^2) (p^4 - 1) \quad R(n) > \frac{3}{2} \quad (6.4)$$

and

$$x W_n^{(b)} \left( \frac{x}{\sqrt{2}} \right) \doteq -\frac{2p}{\pi} Q_{n-1}' \left( \frac{p^2}{p^4 - 1} \right)^{\frac{1}{2}} \quad R(n) > -2. \quad (6.5)$$

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**“ MĀYĀ-VĀDA ”**  
**OR**  
**A CRITICAL EXAMINATION OF THE THEORY**  
**OF WORLD-ILLUSION**

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THE word Māyā-vāda may have many meanings. In its wider application it may mean the whole theory of Advaitism and may thus include all the cardinal doctrines of Advaitism, such as the reality of Brahman, the illusoriness of the world, and the relationship between Jīva and Brahman on the one hand, and Māyā and Brahman on the other. In its more restricted sense, however, Māyā-vāda may mean only the doctrine of the illusoriness of the world. In the present essay I propose to discuss Māyā-vāda in this restricted sense. In this connection I will consider the following questions: (1) Why is the world of our perception to be regarded as illusory? (2) Can it be intelligibly held to be unreal? (3) What is the cause of this world-illusion? or is it without any cause? (4) If the cause of the world-illusion is an entity other than Brahman, what is the relation between the two? I shall begin by stating the answers which Advaitism gives to the above questions, and then examine whether the answers can be maintained justifiably.

However, before proceeding with the subject proper, it is necessary to point out that Advaitins regard Upanishads as the first and last authority for their doctrine. The authority of the scriptures as a means of knowledge must not be challenged. And in fact many supporters of Advaitism assert that it seeks only to give clearer expression to the truth which is already contained in the scriptures. It is, of course, true that Advaitism does not rely simply on Shruti but also adduces arguments in favour of its thesis. But Śaṅkarāchārya, the greatest teacher of the doctrine has clearly said that argumentation is never conclusive<sup>1</sup> and may lead anywhere. But if Shruti is to be the last authority then it is clear that the doctrine can neither be maintained nor refuted on the grounds of pure reason. But Philosophy is a rational enquiry into the nature of Reality; so as a student of philosophy I shall confine myself solely to the rational part of the doctrine. There are, indeed, reasons to doubt whether the scriptures can be regarded as the final authority to decide what is and what is not.

<sup>1</sup> तर्कप्रतिष्ठानात् । *Tarkapratiṣṭhānāt*, cf. *Brahma-Sūtra*, Śaṅkara-bhāṣya.

(1) Thus within the scriptures themselves three kinds of passages are found. Some of them definitely advocate the theory of Advaitism. But some are definitely against it. And there are other passages which are more or less indifferent and can be interpreted either way. Now the question that will naturally arise is which passages are more reliable. But the scriptures cannot themselves decide this issue. Many interpreters of the Vedānta Sūtrās, taking their stand on the scriptures have arrived at conclusions which are altogether different from those of Advaitism. Under these circumstances it would be better not to adduce any scriptural testimony for maintaining any theory.

(2) Secondly, if it be said that Śruti (but not perception or reason) is the only valid means of knowledge, then all our philosophical thought is likely to end in utter scepticism. Even scriptural texts would be of no use as a means of knowledge unless they be heard, and thus perceived. If so, perception too, along with scriptures, becomes a source of knowledge. If perception does not give correct knowledge at any time, how can the scriptural texts? To the extent we believe that the scriptures give us true knowledge, perception must also be admitted as a valid means of knowledge.

Let us now consider why the Advaitins think that the world of perception is illusory. The reason why they think so is that according to them there is only one reality which is a differenceless, changeless, and attributeless consciousness or Brahman. It follows that if there be only one reality and if that reality be Brahman, then the world cannot be real unless it is supposed to be identical with Brahman. But how can the world of multiplicity, difference, change, and attributes be identical with the attributeless Brahman? Hence this world must not be real.

Still, it cannot be denied that the world appears, unreal though it be. What is the ground of this appearance? If there be any ground it must be Brahman. For, Brahman is the only reality that there is. But though in this way Brahman is the ground of the world illusion still it cannot be regarded as its cause. If something is the effect of some other entity which is real, then the effect cannot be regarded as unreal; and if the world is the effect of Brahman then it would automatically follow that the world has the same order of existence as is enjoyed by Brahman. But this would imply two realities. Besides if Brahman be the cause of the world then it cannot be pure. So Brahman should not be regarded as the cause of the world.

Nevertheless, Brahman is the ground of the world appearance. That is, Brahman may be regarded as giving birth to the world of diversities without itself undergoing the least change in its nature. In our ordinary

experience we meet with illusions where one entity appears in the place of another. In such experiences we find that the illusory thing does not affect the nature of the reality in which it appears. Thus we may see a snake where there is really a rope. But the appearance of the snake does not change in any way the actual rope. The appearance of the world in Brahman is to be understood in a similar way.

For proving the illusoriness of the world the advocates of the doctrine usually give the following four arguments<sup>1</sup>: The world is illusory, (i) because it is an *object of knowledge*, (ii) because it is *non-intelligent*, (iii) because it is a *whole* made up of parts, i.e., because it is created; and (iv) because the things of the world are *limited* in respect of (a) space, (b) time, and (c) one another. The arguments may be expressed syllogistically thus:—

*Major premiss*

Whatever is an object of knowledge, whatever is non-intelligent, whatever is made up of parts or created, and whatever is limited is illusory, just as the silver which is seen in the place of a shell is illusory.

*Minor premiss*

The world is an object of knowledge, is non-intelligent, is created, and is limited.

∴ The world is illusory.

Now it seems clear enough that there is no formal fallacy in the above syllogism and as soon as we admit the major premiss, the conclusion inevitably follows. Nor does the major premiss seem to be untrue. No fallacy of ‘illicit major’ is involved here unless it be a fact that some object of knowledge or some non-intelligent thing, etc., is real. But are there not things which are objects of knowledge, or are non-intelligent, etc., and are still real? For example, an objector may urge that “a pot” is an object of knowledge and still everybody knows that it is real. Hence it may be said that there is an undue assumption in the major premiss. But is it really so? When the point at issue is whether the whole world is illusory or not, no particular thing in it can be accepted

<sup>1</sup> Cf. *Advaita Siddhi*—

- (१) प्रपञ्चो मिथ्या दृश्यत्वात् । *Prapañcho mithyā drīṣyatvāt.*
- (२) प्रपञ्चो मिथ्या जडत्वात् । *Prapañcho mithyā jadatvāt.*
- (३) प्रपञ्चो मिथ्या परिच्छिन्नत्वात् । *Prapañcho mithyā paricchinnavāt.*
- (४) प्रपञ्चो मिथ्या अंशित्वात् । *Prapañcho mithyā aṁśitvāt.*



as real, and pointed out as an exception to the major premiss. We can speak of only four kinds of things using the word thing in a most general sense in which it includes even a 'patent absurdity'. These four things are: (i) the Ātman, whose existence is not doubted by any of the disputants; (ii) the empirical world; (iii) the illusory, like the silver which is seen in the place of a shell; and (iv) a 'patent absurdity', like 'the son of a barren woman'. Now of these four things there is no dispute about the three things, viz., the Ātman, the illusory, and the "patently absurd". There is a dispute only with regard to the status of the empirical world. Besides the empirical world, there is only one thing, namely, the illusory which is an object of knowledge, and is non-intelligent, etc. Thus once it is argued on the basis of the method of "Presence and Absence"<sup>3</sup> that whatever is an object of knowledge, whatever is non-intelligent, etc., is illusory no fault with the argument can be found out. For, no one can show to the contrary. Of the possible four "things" in the world the remaining two, viz., the Ātman and the 'Patently Absurd' are neither the objects of knowledge, nor non-intelligent, etc. So once it is asserted that whatever is an object of knowledge, non-intelligent, etc., is illusory there is nothing in the world on the basis of which we can argue that something is an object of knowledge, non-intelligent, etc., and is still real.

It has been pointed out in the above section that Māyā-vāda makes a distinction between the "illusory" and the patently absurd. According to it though the world is illusory still it is not an absolute non-entity like the "son of a barren woman". "Illusory" is a category by itself, which, though it has the same ontological status of unreality, is not describable as real or unreal. In fact Māyā-vāda grants some reality, even to illusions. We cannot assert that an illusory object is unreal. For, it is actually perceived in the same way as any other object which is commonly accepted as real, such as a pot. Nor can it be regarded as real. For, with the rise of the right knowledge, the illusory object no longer appears to be where it was formerly seen. The fundamental difference between real perception and the illusory perception lies in this that the former is uncontradicted and uncanceled, while the latter is contradicted and cancelled. Thus the object of illusion is describable as neither real nor unreal. It is indeterminate or anirvachanīya. The world too, which is an object of cosmic illusion has a similar status.

<sup>3</sup> *Anvaya* (अन्वय) and *Vyatireka* (व्यतिरेक). Sometimes the method of agreement and difference is supposed to be the same as the method of *Anvaya* (अन्वय) and *Vyatireka* (व्यतिरेक). But it is not so.

Let us now pass on to the question: “What is the cause of this world-illusion?” An illusory object, though ultimately unreal, still appears to us. So there must be some cause for its appearance. There must also be some cause for veiling the real object or the substratum of the illusion. By the law of parsimony these two causes may be supposed to be one. The Advaitins name it as *Māyā*, *Avidyā*, or *Ajnāna*, which itself is to be positive in nature, and has the power of concealing the real from our sight and manifesting false appearances. This *Ajnāna*, it is argued, is certainly not the mere absence of knowledge. For, from mere negation of an entity, nothing positive can be produced. This ignorance, too, like the world, or any other object of illusion, is regarded as indeterminate, *i.e.*, neither real nor unreal. It cannot be regarded as real; for, if it is real, then the ignorance would be either a different reality from Brahman, or it would be a part or an attribute of Brahman. But on Advaitic philosophy neither of the alternatives can be maintained. If *Ajnāna* is a real part or attribute of the substratum then the true knowledge of the substratum would involve the knowledge of the ignorance also, and the ignorance would not be destroyed even when the true nature of the substratum is known to us. So *Ajnāna* is not real. Nor can it be said to be unreal. For, this *Ajnāna* is able to bring about effect, *viz.*, that of veiling the substratum and showing up an illusory appearance there. Neither the act of veiling nor the act of showing an appearance can be supposed to belong to the substratum. Hence, we have to admit as their cause a positive entity, which has been named as Ignorance. This positive entity, therefore, cannot be unreal. Thus, *Avidyā* is neither real nor unreal. This being an entity which is neither real nor unreal cannot be supposed to affect the non-duality and changelessness of Brahman which is absolutely real. So the Advaitins think that the fourth question which was raised in the beginning of the essay, *viz.*, about the relation between Brahman and the Ignorance does not arise.

The arguments which an Advaitin adduces in favour of this positive entity, *Ajnāna*, are chiefly based on the consideration of the following:— (1) our experience of it in waking life and deep sleep, and (2) our experience of illusion. As I have considered the arguments based on the experience of illusion in the above section, in this section I shall confine myself only to the arguments following from our experiences in waking life and deep sleep. It is argued that unless Ignorance be something positive in nature we cannot properly understand judgments like (i) “I am ignorant”<sup>4</sup> (ii) “I do not know the meaning of what you say”<sup>5</sup> “I slept happily and

<sup>4</sup> अहं अज्ञः । *Aham ajnah.*

<sup>5</sup> तदुक्तम् अर्थम् न जानामि । *Taduktam artham na jānāmi.*

did not know anything",<sup>6</sup> etc., which we make about ourselves from time to time. Ordinarily one would interpret ignorance as the negation or absence of knowledge (ज्ञानाभाव *jnānābhāva*). But if Ajnāna be a mere absence of knowledge, then, the knowledge (ज्ञान *jnāna*) would be the *pratiyogin* of Ajnāna, i.e., Ajnāna would not be intelligible without reference to knowledge. So the experience of ignorance as expressed in the judgment "I am ignorant", would include also the experience of knowledge. But when I have an experience of knowledge it cannot be said that I have no knowledge or that there is absolute absence of knowledge in me. That is, if ignorance be equivalent to absence of knowledge the experience of ignorance would be impossible. And yet we do have the experience of ignorance. So, ignorance cannot be the same as absence of knowledge. Similar conclusion follows from the statement: "I do not know the meaning of what you say". Like the previous statement "I am ignorant" this statement also should be thought to give us the knowledge of "positive ignorance"; otherwise the difficulties and contradictions which arose in the case of the statement "I am ignorant" would also arise here. The same conclusion follows from a consideration of the experience of deep sleep. Immediately after getting up from sleep, a person says, "I had a sound sleep and did not know anything". Now the vedāntin says that, by the statement "I did not know anything" we should mean that he knew ignorance. "I did not know anything" seems to be a case of past experience as it refers to the period when the person was sound asleep. Thus it cannot be the case of an actual experience. Rather this seems to be a case of memory. But there can be a memory only of positive experience and not of a mere absence of knowledge. Thus "did not know anything" must be referring to some actual experience at the time of deep sleep. But here as we have no remembrance of any particular experience, "I did not know anything" must be a memory of the ignorance itself.

It may be objected that in the deep sleep there is a complete absence of all consciousness; and when a person says, he did not know anything he is referring to this complete absence of all knowledge. Thus it may be said that the absence of knowledge is not known by memory but by inference. But can "I did not know anything" be justifiably held to be the case of inference? If it is a case of inference, then, it must either be on the basis of the absence of memory at the time of the deep sleep, or on the basis of a universal proposition. But "I had a sound sleep and did not know anything" does not seem to be a case of absence of memory. For then he could not have

<sup>6</sup> सुखमहम् अल्पसम् च किंचिदवेदिषम् । *Sukham aham aswapsam na kinchidavediṣam.*

said: "I had a sound sleep". On the contrary this seems to be a case of memory. Again this does not seem to be an inference from a universal proposition. For, in order to assert a universal proposition, "Wherever there is a sound sleep, there is an absence of knowledge," a person must independently know at least one instance of deep sleep, where there is an absence of knowledge. When any instance to this effect cannot be found by any other means, no universal connection between deep sleep and the absence of knowledge can be asserted. And unless there is a universal connexion or 'vyāpti' between the deep sleep and absence of knowledge "I had a sound sleep and did not know anything" cannot be a case of inference. Thus, because the judgments like "I am ignorant" or "I had a sound sleep and did not know anything" cannot be satisfactorily explained if we mean by ignorance, a mere absence of knowledge, ignorance, as a positive entity has to be admitted.

So far, I have tried to give a fairly reliable account of the theory of Māyā. But can the theory be maintained in the form in which it is stated above? I think it cannot be justifiably maintained. Let us examine the theory at length.

#### *Positive Ignorance*

The conception of positive ignorance as the cause of the world-illusion, has been variously criticised by various philosophers. And I think, even from the standpoint of Advaitism there seems to be no reason for positing a cause for the world-illusion. If a person tries to explain the world-illusion on the principle of causation and posit ignorance as the cause of it, the matter will not end here. As 'Ignorance' is not one with Brahman, the question that will naturally arise is: What is the cause of Ignorance? And there would not be any satisfactory answer to the question. It is true that in order to meet this difficulty Advaitism posits Ignorance to be beginningless, but still the logical difficulty remains unsolved. Further if Ignorance be the cause of the world-illusion, what is the relation of Brahman and Ignorance? If Brahman by itself without the help of any other agency could bring about ignorance, it should be able to bring about also the world-illusion without the help of any other cause; and then there would be no necessity of positing Ignorance as the cause of the world. If, however, Ignorance be an effect which is real, then Brahman would not be the only reality and there would be a dualism.

The arguments which are put forward to show that we have a knowledge of Positive Ignorance, are also not conclusive. Expressions like "I am ignorant" do not mean that I have the knowledge of ignorance.

It means that I am not omniscient and do not know everything in the world, though I might be knowing something. Similarly about the deep sleep. The question is whether in deep sleep we have simply a pure consciousness, or the knowledge of ignorance, or a rudimentary vague consciousness, or a complete absence of consciousness. It is true that a man does say that he slept happily and did not know anything. But what is the analysis of the expression "Did not know anything"? One can use such an expression when one has a knowledge of ignorance and then remembers it; or when one has a complete absence of knowledge; or when one has some knowledge but does not remember it. Now the precise meaning of the expression "did not know anything" can be settled only by analysing the phenomenon of deep sleep; and this is a matter of experiment. The view, however, that is generally advanced, nowadays, is that even in what is called the state of deep sleep we have some rudimentary consciousness or a very vague knowledge of objects. Now if the above analysis be correct, then, the expression, "did not know anything" may mean "do not remember anything", and that is the end of the matter. Similar is the case with the statement "I do not know the meaning of what you say". This sentence cannot mean that I have the ignorance of what you say. It means that I know that you are saying something, I also know that what you say has a meaning, but I do not know what that particular meaning is. It is, thus, clear that even when we use ignorance in the sense of absence of knowledge, it stands neither for a state which is absolutely devoid of knowledge, nor for a state of positive ignorance. It may be admitted that a person cannot strictly be said to know a state of absence of knowledge, unless we have the state of knowledge. But there is no harm, if, after we have the knowledge of an entity, we refer to the previous state in which we had no knowledge of it, as a state of the absence of the knowledge of that entity. There is, thus, no necessity of supposing Ajnāna to be something different from the illusion itself.<sup>7</sup>

#### *The Three-fold Division of Real, Unreal and Illusory*

The category of 'illusory' plays a great part in the theory of Māyā. But this category is regarded to be different from both the real and the unreal. Thus, as we have seen, according to Māyā-vāda there would be three kinds of entities. On what basis is this three-fold division made? What is the *fundamentum divisionis* of this distinction? It seems two different principles are employed here. The distinction between 'real' and 'illusory' is made on the basis of the principle that the knowledge of what

<sup>7</sup> Cf. "Ajnān," Prof. G. R. Malkani's article.

is illusory is cancelled, and what is real is not cancelled. On the other hand the distinction between 'unreal' and 'illusory' is made on the principle that what is an object of perception cannot be unreal. For, it is clearly said, "How can an object of illusion be unreal when it is actually given to us?" Now it is clear that if a division like real, unreal and illusory is to be made it should be according to one principle and not two. If two principles are employed simultaneously then the division cannot be exhaustive and there is likely to be a fallacy of cross-division.

Let us examine the principle according to which "illusory" and "unreal" are distinguished. The principle is that *what is an object of perception cannot be unreal*. Now what does this principle imply? Why cannot the object of perception be unreal? The only possible answer to such a question is that so long as it is perceived it exists, or is actually there. But to say that a thing exists is the same thing as to say that it is real. So whether the principle is correct or not, the distinction between unreal and illusory is a distinction between unreal and real; and if this is so, then the division is made according to the principle *that which is perceived is real*. Whether this is a right principle or a mere prejudice one would not think of making distinction of illusory and unreal without some such pre-supposition. However, what I want to point out is that if this is the principle which is presupposed by Māyā-vāda then it cannot be rejected later on; for, it would mean a shifting of the ground. But, in fact, Māyā-vāda wants to prove just the opposite of this, *viz., that whatever is perceived is unreal*. It seems to me that there is a plain contradiction between the two positions and if we start with the one we cannot end with the other.

Even if we accept the other principle of division namely whatever is uncanceled is real, we shall not get, as a result three things called real, unreal and illusory. Instead, we shall have only two things namely real and illusory. The unreal that is the patently self-contradictory cannot be connected with this principle at all. For, it is neither cancelled nor uncanceled. It is held that nothing but what appears can be cancelled; but the self-contradictory never appears.

Nor can we formulate a single principle of division by combining the above two, so as to get the division of real, unreal and illusory, which will be accepted by Advaitism. For according to the proposed combined principle, "that which is perceived and is not cancelled" would be real; "that which is perceived, but is later on cancelled" would be illusory; and, "that which is neither perceived, nor cancelled" would be unreal. Now, of these three definitions Advaitism may accept the definition of the

“illusory”. But Advaitism cannot accept the definition of the “real”; and unreal, for it goes against its very thesis. According to Māyā-vāda the “real” is neither perceived nor cancelled. But according to the above principle of division, it is the definition of “unreal”.

It seems then necessary for Māyā-vāda not to make any distinction like real, illusory and unreal. There should only be two categories real and unreal. And this division can easily be made without employing the above two principles. These two principles are only commonsense tests for deciding whether a certain object is real; and the theory of Māyā ought to reject them if it has to give a consistent philosophy. It is true that there seems to be a different order of existence between the contradictory like a square-circle and an illusory object like silver which is seen in the place of a shell. In a later section I shall try to account for the difference. But from the standpoint of Māyā this difference is really irrelevant. According to Māyā-vāda the contradictory as well as the illusory are both, in the last analysis, unreal. And so, Māyā-vāda should better make a distinction between real and unreal on the basis of some other principle.

*Māyā theory of illusion.*—In Māyā-vāda the world is declared illusory on the basis of commonly accepted experience of illusion. Let us therefore see whether the Advaitin's analysis of illusory experience is correct. When I see silver in the place where there is really a shell it cannot be said that I know silver for the first time in my life. It is indeed true, that when a person has a wrong perception of silver he has no memory of having seen the silver before. But is it necessary to have this memory? Even in the case of veridical perception, when a person sees a certain thing for a second time, he need not be conscious of the fact that he had seen it before. And still the fact remains true that he had seen it. Perception is not a simple, but a complex process, whether it be illusory or veridical. To think that perception involves no memory or conception is wrong. As Kant pointed out long ago, perception without conception is blind. Modern Psychology therefore regards every perception to be an instance of “apperception”. So it is quite plausible that even when I think that I have the perception of silver, the silver might have been supplied by my past experience of it, and thus it is possible for me to see silver where it does not actually exist. That is, unless we recognize that there is silver somewhere we cannot possibly have an illusion of silver.

I now come to the second point in the theory of illusion. It has been seen that what is regarded as an illusory object is real somewhere and at some time. Thus, if there is an illusion of silver, silver must be real. But,

further some other thing ought to be real if I am to know that a certain perception is illusory. How is a person able to distinguish between the real and the illusory I need not consider just now. I shall simply take it for granted that a person is able to distinguish between the illusory and the real. Silver is illusory because the shell is real. We thus conclude that the illusion of silver implies the reality of both the shell and the silver at some place or other. Further, they must belong to the same order of existence. The silver must be a part of the same world of which the shell is a part.

Here a difficulty arises. In front of me there is only a shell. Silver is somewhere else. How then is it that I see silver in the place of the shell, unless there be illusory silver which is neither real nor unreal? My answer is that the above difficulty is based on the notion that perception is a simple process in which one has simply to receive what is given from outside and nothing to add of one's own. Modern Psychology tells us that this notion is mistaken. In a perceptual process what is given from outside is a very small datum and on the basis of this datum we construct our objects. Now it may sometimes happen that several objects have some common datum. If only this common datum is sensed while perceiving one such object, our perception of it is likely to be illusory, unless we correctly interpret it. In all cases of perceptual illusion some common datum will be found. Where, for example, silver is seen in the place of a shell, the visual data of silver and shell are the same; and so long as some other datum is not sensed the shell may appear as silver. That a perceptual process involves a good deal of intellectual interpretation, can be seen in cases of "Complication"—as for example, when observing a piece of ice, one says that it looks cold. In such cases there is an immediate inference from one datum to another. Had there been no interpretation of the datum one should not be justified in saying that the block of ice looks cold.

In a previous section I have pointed out that there is no difference between calling a thing illusory and calling it unreal. Still, the nature of the illusory object seems to be different from that of the contradictory. How to account for this difference? I shall take three examples and try to contrast them with one another. I have already examined the first, namely, the case of illusory silver. The other two examples which I shall consider are those of "pink rats" seen by a drunkard and of things like a square-circle or a barren woman's son.

The illusion of pink rats is also perceptual in nature. But, there seem to be important differences between the experience of silver which is seen



in the place of a shell and pink rats. In the instance of illusory perception of silver, we experience a thing which though it does not exist where it is perceived to be, still, exists somewhere. Further, while in the first case there is a perceptual datum which is misinterpreted, in the second there is no such datum. This means that, while the latter is mainly imaginary the former has some basis in actual perception. Secondly unlike the illusion of silver which is seen in place of shell, a 'pink rat' illusion consists in bringing together by imagination two separately existing entities (i) pink (colour) and (ii) rat. Now what makes the pink rat illusion perceptible? It will be admitted that a strong imagination generally takes the form of images and if the images are compatible they may exist together. This is what has happened in the illusion of pink rat. A rat is a thing which has a colour, though it is different from pink. Thus by imagining some other colour say, pink, instead of its natural colour one can arrive at the image of the pink rat. Though we do not come across pink rats we know that if we paint a rat with pink colour, it would appear pink. That is how the illusion of pink rats becomes possible. But just as by strong imagination we can bring two or more compatible things together, and make one composite thing like a pink rat, so also we can bring together two or more incompatible entities, *e.g.*, a square, and a circle. Now these two entities do have a separate existence. But they cannot exist together. It is owing to this that the square-circle is not real. Moreover, it is not possible to perceive it because each of its constituents excludes the other. Hence the perception of the square-circle is not possible. But though its perception is not possible, it is not in any way different in nature, from the illusory silver or a pink rat. One is therefore justified in concluding that there is no difference between the 'illusory' and the 'unreal'.

To summarize the results of our enquiry regarding an ordinary experience of illusion, in the first place I should say that though an experience may be regarded as illusory, the object of the illusory experience cannot be unreal or non-existent. Secondly, an experience can be regarded illusory only on the basis of some other real experience. There is no sense in calling an experience illusory, if one is not able to distinguish between an illusory experience and a real experience. One could deny reality a certain thing, only if one could assert some other thing to be real. Thirdly, the illusory object as well as the object on the basis of which the illusory object is regarded as unreal, should have the same order of existence. And again, there should be some common datum between the two.

Let us now in the light of these results, consider the thesis that the whole world is illusory. If the distinction between the illusory and the real is

essential to the understanding of an illusory experience, shall we be able to say, that the whole world is illusory? If the experience of the world is false, it must be only on the ground that some other experience is true. An Advaitin may object at this stage, "yes, the experience of this world is false, because, some other experience, viz., the experience of Brahman, is true". But then, the question that would arise is, whether the Brahman has the same order of existence as the world; for, we can have an illusion of the world, in place of the Brahman only if the Brahman and the world have the same order of existence. Further one would like to ask, "What is the common datum (which is needed in order that there should be an illusion), between the Brahman and the world?" Unless these two questions are satisfactorily answered, one cannot declare the whole world as illusory.

But, further, can we on the basis of our ordinary illusory experience, declare the whole world to be unreal? We can judge an experience to be illusory only on the basis that the world is real. Can we, then, declare the world to be illusory on the basis of such illusory experience as those of silver in a shell. I venture to say that we cannot. But the argument given for the illusoriness of the world is of this very type. We may formally put it in the following manner; X is illusory because Y is real, and Y is illusory because it is similar to X in many respects. Now, such an argument appears to be quite fallacious on the face of it. But, this in substance, is the argument which declares the world as illusory.

There seems to be one more difficulty involved in the illusoriness of the world. In an ordinary illusion, the so-called illusory object is real, though, of course, at a place and time other than that in which it is perceived to be. We have seen that we can have illusion either of some real thing or of a composite thing made up of parts which are real. Now, if the world is really illusory, it must be either itself real somewhere, or it must be made up of some real parts. But in either case the reality of the world is admitted somewhere and at some time.

The Advaitin may reply that for an illusory perception it is not necessary that the illusory content should be real; it is enough if there be a previous cognition, true or false of the same content. It is, thus, thought that as every one has the knowledge of the world, the illusion is possible. But one would ask: how could one have the previous knowledge of the world if the world be not real at all? The reply may be: because, though the world is illusory, still, it is beginningless. But still the question remains: If this beginningless world is illusory and therefore, unreal, how could there be an illusion of it for the first time? To say that the world is

beginningless is no answer to the above question; it is simply avoiding the issue.

Thus it seems that on the basis of the ordinary illusion we cannot argue the illusoriness of the whole world. On the contrary there is every reason to believe that the world may be real. According to Advaitism, non-cancellation of an entity is a test of its being real. By cancellation (of an entity) is meant a cognition which asserts that something is false and that it did not exist in the past, is not existing now, and will not exist in the future. Non-cancellation is just the opposite of this. Now an illusion is cancelled by a later perception; but the knowledge of things like pots and tables is never cancelled in that way. These things may be non-existent at some time or place. But it can never be denied that they are real where and when they exist. It is sometimes contended on behalf of Advaitins that a thing which has a beginning and an end is unreal. It would appear, however, that this is no *a priori* truth. It is true that a vedāntin would argue, that though things like pots and tables are not cancelled by any of our perception, still they are cancelled by reason, and that when a person has self-realization, things like pots and tables which constitute the world, are cancelled even by perception. We, however, need not consider the case of a man who attains self-realization. Because, one cannot have a self-realization unless one is intellectually convinced of the illusoriness of the world. We must therefore, see whether there is an intellectual cancellation of things like pots and tables. We have seen that, because we cannot argue the illusoriness of the world on the basis of an ordinary illusion, there cannot be an intellectual cancellation of the world. Thus when there is a positive evidence in favour of the reality of the world and none whatsoever in favour of its unreality, the world is definitely not illusory. We can, then, conclude that what are supposed by Advaitins to be characteristics of an illusion such as objectivity दृश्यत्व (*Dṛśyatva*), non-intelligence जडत्व (*jadatva*), limitation अंशित्व (*Aṁśitva*), etc., are not the characteristics of an illusory object only. They may be characteristics common to both a real and an illusory object. So if we try to argue the illusoriness of something on the basis of these characteristics then, the arguments will involve the fallacy of "Undistributed Middle".

Two more arguments are likely to come from the side of Advaitism.

(i) If pure consciousness is real how can there be any other reality? If there be some other reality then there would be a real relationship between the two. And in so far as there is a real relationship between the two, the two realities would make one whole. I need not go in criticism

of this view for want of space. But such a view seems to be a mere consequence of the prejudice that the real must be only one having no other to it, . . . a prejudice which has its source in such passages of the Upanishads as, “O, Soumya this was in the beginning one having no other.”<sup>8</sup>

(ii) It may be said that Māyā-vāda is not a theory; it is a state of fact. Whatever explanation we try to give of the world it is sure to end in contradiction. I shall make only three passing remarks on such a position.

(a) It is doubtful whether we cannot give any satisfactory explanation of the world. Even if all attempts made for explaining the world, have failed hitherto, still it is possible that some one in future may be able to explain it satisfactorily.

(b) If our categories are inadequate to explain the world we ought to evolve other categories through which we may be able to explain it. But because the categories in terms of which we try to explain the world are inadequate, we should not conclude that the world is illusory.

(c) Even if we are not able to give a satisfactory explanation of the world, we cannot prove the illusoriness of the world unless the proposition “What cannot be satisfactorily explained is unreal” is true. But such a proposition does not seem to be self-evident. Nor are there reasons to support it. We can then say that the illusoriness of the whole world does not seem to be quite intelligible.

Is it then a non-significant proposition to say that the world is “Mithyā”. That the world is “Mithyā” does not seem to be quite a non-significant proposition, and indeed, a person does feel that the world is “Mithyā” on some occasions, when, *e.g.*, he is greatly disappointed or when he is in great miseries. But it seems to me that when we say that the world is “Mithyā”, we do not mean to say that it is nothing at all, or that it never existed or will never exist. What we mean to say is that the world is not “good”; it is not “valuable”. Thus, that the world is “Mithyā” seems to be a value judgment and not an ontological judgment; and in so far as it is a value judgment it seems to me to be quite intelligible and may also be more or less probable, though whether actually it is so is extremely doubtful. Thus “Mithyā” seems to me to be an ambiguous word having two meanings: (1) illusory, (2) valueless. It seems it was primarily intended to be used in the second sense; but on account of confusion between the two meanings it was interpreted in the first sense and an ontological theory was devised in conformity with that sense. That

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<sup>8</sup> Cf. *Chhândogya Upanishad*.

by the proposition, that the world is "Mithyā", an ethical sense was intended can be seen even in Śankara's writings, like "the world is valueless or 'Asār'".<sup>9</sup> If we suppose that the word "Mithyā" is used in the ethical sense and if we look at the whole theory from an ethical point of view it becomes clearer. For example, it seems difficult to imagine how there can be different grades or degrees of reality. But certainly there can be different grades or degrees of value. Thus it seems quite possible that Empirical reality व्यावहारिकी सत्ता (*Vyāvahārikī Sattā*) may be more valuable than the illusory प्रतिभासिकी सत्ता (*Prātibhāsikī Sattā*) and the ultimate Reality पारमार्थिकी सत्ता (*Pāramārthikī Sattā*) more valuable than the empirical. But we should not be able to say that the so-called "Ultimate reality" is more real than the empirical one.

It is, of course, likely to be said that the distinction between ethics and metaphysics is not ultimate and what is real is also good, and what is good is also real. I shall not enter into this controversy here but shall simply state in the words of Prof. G. E. Moore, that from no metaphysical proposition an ethical proposition can be derived. One cannot say that something is good *because* something is real. If one tries to give such a reasoning then one is committing what Prof. Moore calls a *naturalistic fallacy*.<sup>10</sup>

In the conclusion it may be said that we have tried to understand the reasons usually given for regarding the world as illusory and we have also tried to see if this thesis can be defended, but ultimately we have found that the illusoriness of the whole world is an unintelligible doctrine, hard to believe and harder to defend. However, we found that though the doctrine that the whole world is illusory seems to be unintelligible, the doctrine that the whole world is valueless does not seem to be quite unintelligible though its truth is doubtful. That the world is valueless may be the intended meaning of the proposition that the world is "Mithyā". We then conclude that Māyā-vāda as a metaphysical doctrine is not acceptable. If it be acceptable at all it must be interpreted as an ethical judgment about the world. But even, as such a judgment of value, it is not free from doubt. To those, however, who claim that it is a metaphysical doctrine, we answer:

"If the world be a phantom as thou sayest,  
A splendid figment and a prodigious dream,  
To reach the Real and the True I shall make no haste,  
More than content with the worlds that only seem."

<sup>9</sup> असारः खलु संसारः । *Asārah khalu samsārah.*

<sup>10</sup> Cf. *Principia Ethica*, chapter

## SŪZANĪ

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WHAT we know about Sūzanī, the Persian Satirist, is scanty, because he belonged to an age which is not completely or systematically traced by any history or biography. Here we try to gather something about his career from his work preserved in the Ḥabībganj Library (Dist. Aligarh, U.P.) and in order to have a historical background for it we may seek some torch-lights scattered in these "darkest pages of Muslim History".<sup>1</sup>

Samarqand and Bukhārā, the places of the poet's resort, were included in the territory of Transoxiana and it was in<sup>2</sup> 441/1049 when Chaghri Beg b. Mikā'il b. Saljūq (d.<sup>3</sup> 452/1060) first brought it under the Saljūq suzerainty. From the Tārīkh-i-Bukhārā<sup>4</sup> (p. 35) we understand that about this time Ibrāhīm-i-Tamghāj Khān and then his son Naṣr Khān (the patron of 'Am'aq, Lubāb II, 188-190) ruled the territory and that after the latter his brother Khizr Khān became the ruler, being later on succeeded by his son Aḥmad Khān (d. 488/1095). It was most probably<sup>5</sup> this ruler who was captured by Malik Shāh (d. 486/1093) in 471/1078-9, taken to Khurāsān and then again given back into the vassalage of Transoxiana. About Sulaymān Khān and his son Arslān Khān Muḥammad we again do not know the exact dates, but from the Tārīkh-i-Bukhārā<sup>6</sup> we understand that the latter was ruling certainly in 515/1121 and 517/1123. From the same book we know that a few years before 522/1128, when its Persian version

<sup>1</sup> Upon the "darkness" of this age Barthold throws some light in his *Turkestan*, p. 30.

<sup>2</sup> Hakīm's *Tārīkh-i-Māwāraun-Nahr*, p. 16, Bombay, 1310.

<sup>3</sup> In the *Akhḍarud-Dawlati-Sabḡiyya*, p. 29 (Lahore, 1933) the date of Chaghri Beg's death is 452, while in the *Rauḍatus-Safā* (Vol. IV, p. 124, Lucknow, 1915) his son Qāwurd's ascension to the throne is given in 450, thus denoting his father's death in that year.

<sup>4</sup> Its original Arabic version had been prepared by some Abū Bakr Muḥammad b. Ja'far (d. 348/959) and it was later translated into Persian by Abū Naṣr Aḥmad b. Muḥammad in 522/1128, then summarized by Muhammad b. Zufar, b. 'Umar in 572-1176. It has now been published in Persia along with its additions which had been made after Muhammad b. Zufar.

<sup>5</sup> In the above-mentioned history (p. 36, ll. 1-3) it is stated that it was Ahmad Khan who had been captured by Malik Shah, but in the *Rauḍatus-Safā* (Vol. IV, p. 100) Sulaymān Khān is said to have been captivated. It is just possible that both these names were of one person, thus the full name being Sulayman Khan Ahmad, just as his son's full name was Arslan Khan Muḥammad.

<sup>6</sup> P. 61, l. 8 and p. 62, l. 17.

by Abū Naṣr Aḥmad b. Muḥammad was prepared, this Arslān Khān had re-populated the fortress of Bukhārā.<sup>7</sup> This fact further clarifies the point that Arslān Khān ruled about 517/1123 or even later.

From 524/1130 to 526/1132 the ruler of Samarqand was Qilij Tamghāj Hasan b. 'Abdu'l Mu'min, *alias* "Hasan-tigīn",<sup>8</sup> while Amir-i-Zangī 'Alī-i-Khalīfa was ruling Bukhārā in 534/1140, when, because of his vassalage to Sanjar (d. 552/1157) he was attacked and killed by Khwārazm Shāh.<sup>9</sup> In 536/1142 Gaur Khān Khaṭā'i defeated Sanjar, killed several great men like Ḥusāmu'd-Dīn 'Umar (b. 'Abdul 'Azīz b. Māza) and appointed Alptigīn as ruler of Bukhārā.<sup>10</sup> One year after the death of Gaur Khan, *i.e.* in 538/1144, the Ghuzz Turks invaded Bukhārā, captivated its chiefs Qarācha Beg and 'Ainu'd-Dawla and killed the vizier Shihāb.<sup>11</sup> These Turks gained power till they captured Sanjar, as is well-known, towards the end of 548/1154. With this unexpected defeat the whole Saljūq power was shattered and even in the heart of Khurāsān the invaders established their sway.

In 559/1164 the Qarluq Turks invaded Bukhārā, but were completely vanquished by Shamsu'd-Dīn Muḥammad b. Ḥusāmu'd-Dīn 'Umar with the help of Chaghri Beg b. "Hasan-tigīn", the Khaṭā'i ruler.<sup>12</sup> It was probably this Chag ri Beg (or his brother?) who is also known as Ru'knu'd-Dīn Mas'ūd and who erected the ramparts of Bukhārā in 560<sup>13</sup>/1165. Much after this date we know from 'Awfi<sup>14</sup> that Qilij Tamghāj Khān Ibrāhīm b. Ḥusain was ruling in Transoxiana in 597/1201 and he is supposed by Mirza Qazwīnī<sup>15</sup> to have died by 600/1204 and his son Arslān Khān 'Uthmān, the last Ilak-Khānī ruler, in 609/1212. This is what we can gather about the age when our poet lived. Now we turn to his work which will throw some light upon this 'dark' period.

The poet's proper name was Muḥammad<sup>16</sup> b. 'Alī and his pen-name "Sūzanī" is said to have been derived after his attachment to the apprentice

<sup>7</sup> *Ibid.*, p. 30, ll. 6-7. For 522/1128, the date of the Persian version, see its Preface, p. 5.

<sup>8</sup> 'Awfi's *Lubāb*, I, 303.

<sup>11</sup> *Ibid.*

<sup>9</sup> *Tārīkh-i-Bukhārā*, p. 30.

<sup>12</sup> *Lubāb*, I, p. 332.

<sup>10</sup> *Ibid.*

<sup>13</sup> *Tārīkh-i-Bukhārā*, p. 42.

<sup>14</sup> *Lubāb*, I, p. 44.

<sup>15</sup> *Ibid.*, p. 302. Mirza Qazwini quotes the date of Arslan Khān 'Uthmān's murder as 609-1212, but from the *Tārīkh-i-Bukhārā* (p. 31), a better authority, we know that Sultan Muhammad Khwarazm Shah captured Bukhara in 604-1207 (thus bringing the ruling dynasty to an end) and in 616/1219 it was devastated by Chingiz Khan.

<sup>16</sup> Browne (II, 342 n.) mentions his another name as Abū Bakr ibnu's-Salmānī of Kalāsh, near Samarqand.

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WHAT we know about Sūzanī, the Persian Satirist, is scanty, because he belonged to an age which is not completely or systematically traced by any history or biography. Here we try to gather something about his career from his work preserved in the Ḥabībganj Library (Dist. Aligarh, U.P.) and in order to have a historical background for it we may seek some torch-lights scattered in these "darkest pages of Muslim History".<sup>1</sup>

Samarqand and Bukhārā, the places of the poet's resort, were included in the territory of Transoxiana and it was in<sup>2</sup> 441/1049 when Chaghri Beg b. Mikā'il b. Saljūq (d.<sup>3</sup> 452/1060) first brought it under the Saljūq suzerainty. From the Tārīkh-i-Bukhārā<sup>4</sup> (p. 35) we understand that about this time Ibrāhīm-i-Tamghāj Khān and then his son Naṣr Khān (the patron of 'Am'aq, Lubāb II, 188-190) ruled the territory and that after the latter his brother Khizr Khān became the ruler, being later on succeeded by his son Aḥmad Khān (d. 488/1095). It was most probably<sup>5</sup> this ruler who was captured by Malik Shāh (d. 486/1093) in 471/1078-9, taken to Khurāsān and then again given back into the vassalage of Transoxiana. About Sulaymān Khān and his son Arslān Khān Muḥammad we again do not know the exact dates, but from the Tārīkh-i-Bukhārā<sup>6</sup> we understand that the latter was ruling certainly in 515/1121 and 517/1123. From the same book we know that a few years before 522/1128, when its Persian version

<sup>1</sup> Upon the "darkness" of this age Barthold throws some light in his *Turkestan*, p. 30.

<sup>2</sup> Hakim's *Ta'rikh-i-Mawāraun-Nahr*, p. 16, Bombay, 1310.

<sup>3</sup> In the *Akḥbārūd-Dawlati-Sabjuqiyya*, p. 29 (Lahore, 1933) the date of Chaghri Beg's death is 452, while in the *Rauḍatus-Safā* (Vol. IV, p. 124, Lucknow, 1915) his son Qāwurd's ascension to the throne is given in 450, thus denoting his father's death in that year.

<sup>4</sup> Its original Arabic version had been prepared by some Abū Bakr Muḥammad b. Ja'far (d. 348/959) and it was later translated into Persian by Abū Naṣr Aḥmad b. Muḥammad in 522/1128, then summarized by Muhammad b. Zufar, b. 'Umar in 572-1176. It has now been published in Persia along with its additions which had been made after Muhammad b. Zufar.

<sup>5</sup> In the above-mentioned history (p. 36, ll. 1-3) it is stated that it was Ahmad Khan who had been captured by Malik Shah, but in the *Rauḍatus-Safā* (Vol. IV, p. 100) Sulaymān Khān is said to have been captivated. It is just possible that both these names were of one person, thus the full name being Sulayman Khan Ahmad, just as his son's full name was Arslan Khan Muḥammad.

<sup>6</sup> P. 61, l. 8 and p. 62, l. 17.



by Abū Naṣr Aḥmad b. Muḥammad was prepared, this Arslān Khān had re-populated the fortress of Bukhārā.<sup>7</sup> This fact further clarifies the point that Arslān Khān ruled about 517/1123 or even later.

From 524/1130 to 526/1132 the ruler of Samarqand was Qilij Tamghāj Ḥasan b. 'Abdu'l Mu'min, *alias* "Ḥasan-tigīn",<sup>8</sup> while Amir-i-Zangī 'Alī-i-Khalīfa was ruling Bukhārā in 534/1140, when, because of his vassalage to Sanjar (d. 552/1157) he was attacked and killed by Khwārazm Shāh.<sup>9</sup> In 536/1142 Gaur Khān Khaṭā'i defeated Sanjar, killed several great men like Ḥusāmu'd-Dīn 'Umar (b. 'Abdul 'Azīz b. Māza) and appointed Alptigīn as ruler of Bukhārā.<sup>10</sup> One year after the death of Gaur Khan, *i.e.* in 538/1144, the Ghuzz Turks invaded Bukhārā, captivated its chiefs Qarācha Beg and 'Ainu'd-Dawla and killed the vizier Shihāb.<sup>11</sup> These Turks gained power till they captured Sanjar, as is well-known, towards the end of 548/1154. With this unexpected defeat the whole Saljūq power was shattered and even in the heart of Khurāsān the invaders established their sway.

In 559/1164 the Qarluq Turks invaded Bukhārā, but were completely vanquished by Shamsu'd-Dīn Muḥammad b. Ḥusāmu'd-Dīn 'Umar with the help of Chaghri Beg b. "Ḥasan-tigīn", the Khaṭā'i ruler.<sup>12</sup> It was probably this Chaghri Beg (or his brother?) who is also known as Ru'knu'd-Dīn Mas'ūd and who erected the ramparts of Bukhārā in 560<sup>13</sup>/1165. Much after this date we know from 'Awfī<sup>14</sup> that Qilij Tamghāj Khān Ibrāhīm b. Ḥusain was ruling in Transoxiana in 597/1201 and he is supposed by Mirza Qazwīnī<sup>15</sup> to have died by 600/1204 and his son Arslān Khān 'Uthmān, the last Ilak-Khānī ruler, in 609/1212. This is what we can gather about the age when our poet lived. Now we turn to his work which will throw some light upon this 'dark' period.

The poet's proper name was Muḥammad<sup>16</sup> b. 'Alī and his pen-name "Sūzanī" is said to have been derived after his attachment to the apprentice

<sup>7</sup> *Ibid.*, p. 30, ll. 6-7. For 522/1128, the date of the Persian version, see its Preface, p. 5.

<sup>8</sup> 'Awfī's *Lubāb*, I, 305.

<sup>11</sup> *Ibid.*

<sup>9</sup> *Tārīkh-i-Bukhārā*, p. 30.

<sup>12</sup> *Lubāb*, I, p. 332.

<sup>10</sup> *Ibid.*

<sup>13</sup> *Tārīkh-i-Bukhārā*, p. 42.

<sup>14</sup> *Lubāb*, I, p. 44.

<sup>15</sup> *Ibid.*, p. 302. Mirza Qazwini quotes the date of Arslan Khān 'Uthmān's murder as 609-1212, but from the *Tārīkh-i-Bukhārā* (p. 31), a better authority, we know that Sultan Muḥammad Khwarazm Shah captured Bukhara in 604-1207 (thus bringing the ruling dynasty to an end) and in 616/1219 it was devastated by Chingiz Khan.

<sup>16</sup> Browne (II, 342 n.) mentions his another name as Abū Bakr ibnu's-Salmānī of Kalāsh, near Samarqand.

of a manufacturer of needles<sup>17</sup> ('Sūzan'). The oldest panegyric which we get in his work is in praise of Arslān Khān Muḥammad b. Sulaimān, who, as we have seen above, lived sometime in the first quarter of the 6th century A.H. (or of the 12th century A.D.). In that panegyric a reference is made to this vizier Sa'du'l-Mu'lk, as well, and it runs as follows:—

وزیرشاه پدیدارسلوان به عروش گرفت و داد به پیمان دوستی دل بهوش  
به دو ستم گل و بلبل ز جام و لب لکزد شراب گلگون از جام گلخواران نوش  
بهر سعادت دستورش شاه سعدالملک به سلامت ایام سپسلوان به عروش  
به قفسه دشمن خاقان شب سلیمان سر کشید صف اهریمنان آهین پوشش  
همه این بلیک آن که چون بلیک آن وار مسخر اندور این دانش و طیر او و عوش  
زاد کند می آمد که گفتم نامه سید به دست پر یک سلیمان زاد کند به او دش

Then we find a panegyric in praise of Ḥusāmu'd-Dīn 'Umar (b. Imām Burhānu'd-Dīn 'Abdu'l-'Azīz b. Māza), who is called, by the poet, a commander-in-chief of Turkestan (appointed by Sanjar?). We may quote here two important lines from it:—

حسام الدین والدین سیب لاریکس کور لشکر توفی بیکان ایران ستم و ستان  
سمرقندی به عدل تو به ترکستان چنان لاند که ترکستان سمرقند و سمرقند است گستان

After Ḥusāmu'd-Dīn, his son Shamsu'd-Dīn Muḥammad became the chief of Bukhara and, as we have noticed, he was living in 559/1164. About him and his master Chaghri Khān b. Ḥasan-tigīn we find the following eulogy by Sūzanī, quoted in the Lubāb I, 333:—

شاه جهان به صدر جهان شاد و خرم است جاوید بادشاه به شادی و خوشی  
سلطان علم و دینی و دنیا هم آن است چون نیک خواه دولت شاه معظمی  
در هیچ تو به صورت نصیب آن کنم یک بیت رودکی را در حق بلعسی  
صد جهان جهان همه تاریک است شب است از بهر ناسپیده صادق بی دبی  
از مشیت تو به بعضی و خمدق سلطان سبکست در است بخارا از محسنی  
حق که گداشتی که بخا و اسه چو بهشت ویران شد به ببله شسته جهنی  
شمس حسام بر پا دانی که تو کنی در و بکناریاں را در بان و مصرنی

<sup>17</sup> *Lubāb*, II, 191.

<sup>18</sup> *Ḥabībgarf MS.*, f. 37a.

<sup>19</sup> *Ibid.*, f. 38a.

<sup>20</sup> In the fifth verse the poet says that Bukhara is without ramparts. From the *Tārīkh-i-Bukhārā* (p. 42) we know that in 235/849 they had been erected for the first time and were again built by Arslān Khān and later by Ru'knu'd-Dīn Mas'ūd in 560-1165.

Then we find a panegyric in praise of Ru'knu'd-Dīn Mas'ūd b. Hasan-tigīn, written on the occasion when he was appointed a ruler of Bukhārā and Samarqand by the Khaṭā'ī Turks. A few lines of it may be quoted here:—

پخت ملک فریدون بکوس شاه چہل	بر از جلوس فریدون کیاں
شہ ملک سالیہن شہرق رکن الدین	کہ حاکم است بر بیل بدل نوشتران
ابو الظفر محمود بن حسن شہ شہرق	کہ بہت نام ہے اسل سقاہ و احسان
توقی ال اندلس قندیاں بر دولت	رونوہ بر رہنماں تو بحسب حقان

In another panegyric in his praise the poet recalls the grandeur of the late ruler Arslān Khān:—

ز نور طلعت افسر ارسلان غانی	ہی شود چوں جمال اندر آیینہ پیا
خدا جان چہاں شاہ شہرق رکن الدین	کز دست شہر سمرقند جنت الدینا
ہو دار ملک سمرقند چوں بہشت نیش	بر پادشاہی دنیسا بر نسبت دنیا

The poet gives one important but unknown date, Muḥarram 560/ November 1164, when Sa'du'l-Mulk Mas'ūd was appointed the vizier of this ruler Ru'knu'd-Dīn Mas'ūd:—

سید ماہ قوسم بہ سال پانصد و شصت	بر بارگاہ وزیر خدایگان بہشت
کہ تا نظر کند اندر جمال طلعت او	کہ بیچ شد را مانند او وزیر بہشت
سر وزیران صدر بزرگ سعد الملک	کہ سعد اکبر ناصر بود بدو بہشت
و بر سعادت نام خدایگان مسعود	کشاد بخت مساعد بہر کہ نتوان بہشت

He wrote another panegyric on this occasion:—

خیر شاہ سعد الملک مسعود	چو سعد آباد کرد از کوہ محمود
کہ سعد بن فلک مسعود گشتند	ز سعد آباد و سعد الملک مسعود
ز سعد الملک سعد الدولہ اسعد	شدہ آوردن معدوم موجود
ہمسد بر بند پیر و جد شاہ	نشت این پاک اصل پاک موجود
بر اقبال شہنشاہ معظم	شد اندر ہر دے محبوب و موردود

<sup>21</sup> *Habibganj MS.*, ff. 27b-28a.

<sup>22</sup> *Ibid.*, f. 28a.

<sup>23</sup> *Ibid.*, f. 11a.

There is one more panegyric in his praise, in which he is said to have been descended from Sa'du'l-Mu'lk Fakhru'd-Dīn<sup>24</sup>, the vizier of Arslān Khān:—

برجہاں داری میا ہاشم سعد اللہ	لے سعد اللہ فخر الدین چغان یادگار
تا بنم سعد تو القاب سعد اللہ	بخت مسعود قلع طغاج خان مسعود کرد
بر تو سعد اللہ ملک سعد و اقرار	تا بنم سعد و سعد اختر مسعود بخت

Then we get a few panegyrics in praise of Ṣadr-i-Jahān Bu'r'hānu'd-Dīn 'Abdu'l 'Azīz b. 'Umar b. 'Abdu'l 'Azīz b. Māza. One of them is as follows:—

تا از شناس صدر جہاں پر کرم جہاں	دارم چو لے آں کو پر از در کرم دعاں
وز پایگاہ ادب فلک بر شدن تو اں	سعد جہاں کہ صدر جہاں پایگاہ اوست
بر ہاں حق، حسا نظر، سیف حکماں	بر ہاں دین بہت پرستان شمع دین
تو اں گذشت از آں ازان سہل	چکے کہ او کند، خط مسرمان او کشد
واندر جہاں تجستہ تر از فال شدہ اں	شہ را تجستہ فال بہ دیدار رو اوست
ز دیا شکوہ تر نے دیں دین و خاندان	بے خاندان بر ہاں در دین شکوہ نیست
شاگرد و دودمان سے اندانیت و دودمان	نہیں آستان کہ تا مردم کہہ اہل علم

This "Ṣadr-i-Jahān" lived at least<sup>25</sup> upto 572/1176 or 574/1178, when Muḥammad b. Zufar b. Umar summarised the Tārikh-i-Bukhārā for him. But we do not know the time when Sūzanī praised him, as he is himself said to have died<sup>26</sup> in 569/1173. This is all that we gather about the poet's career from his work.

<sup>24</sup> Sūzanī has praised one Fakhru'd-Dīn in a panegyric which is in the *Lubāb*, II, 194 and its 9th verse in the *Ḥabībganj* MS. (f. 136) is as follows:—

فخران فخر دین کہ شد از اہل زینت  
کاسے آدمی بہ صورت و با سیرت ملک

This patron was probably a 'Shāfi'ite' sunni, as is inferred from the 8th line of that eulogy and would have been different from Sa'du'l-Mu'lk Fakhru'd-Dīn, the vizier of Arslān Khān, because its lines show much of the poet's skill in his art, which he could have attained in the late years of his age. There is one more panegyric in the *Lubāb* (II, 197) which is in praise of some Iftikhār-i-Dīn 'Alī, who was probably "Iftikhār-i-Jahān", mentioned in the *Lubāb*, I, 335, 2.

<sup>25</sup> *Tārikh-i-Bukhārā* is believed to have been summarised in 572, as its editor says in its introduction (p. 6), but Mirza Qazwīnī (*Lubāb*, I, 334) gives its date as 574.

<sup>26</sup> Browne (II. 343) as quoted from *Dawlatshah*.

# DISTRIBUTION LAWS OF THE DIFFERENCE AND QUOTIENT OF VARIABLES INDEPENDENTLY DISTRIBUTED IN THE CLASSICAL-D<sup>2</sup> LAW

BY M. P. SHRIVASTAVA AND S. S. SHRIKHANDE

IN a previous paper<sup>1</sup> were given the distribution laws of the difference and quotient of two variables drawn independently and randomly from the same classical D<sup>2</sup> population. It was later on suggested by Mr. R. C. Bose to extend those results to the case of populations with different parameters. This suggestion has been carried out in this note.

## *The Distribution Law of the Difference*

Let (1)  
 $u = x - y, u > 0$

where the distribution laws of  $x$  and  $y$  are independent and are given by

$$f(x) = p^{-m} a^{m+1} e^{-\frac{p^2}{2}} e^{-ax} x^{m+1/2} I_m(2p\sqrt{x}) \quad \text{where } 0 < x < \infty \quad (2)$$

and

$$g(y) = q^{-n} \beta^{n+1} e^{-\frac{q^2}{2}} e^{-\beta y} y^{n+1/2} I_n(2q\sqrt{y}) \quad \text{where } 0 < y < \infty \quad (3)$$

The characteristic function of the distribution law of  $u$  is given by

$$Q(t) = \int_0^\infty \int_0^\infty e^{it(x-y)} f(x) g(y) dx dy \quad (4)$$

Making use of the result<sup>2</sup>

$$\int_0^\infty e^{-vz} z^{v+1/2} I_\nu(2a\sqrt{z}) dz = a^\nu b^{-\nu-1} e^{\frac{a^2}{b}} \quad (5)$$

where  $R(\nu) > -1$  we get

$$Q(t) = \left(\frac{a}{a-it}\right)^{m+1} \left(\frac{\beta}{\beta+it}\right)^{n+1} \exp \left\{ -\frac{p^2}{a} - \frac{q^2}{\beta} + \frac{p^2}{a-it} + \frac{q^2}{\beta+it} \right\} \quad (6)$$

The distribution law of  $u$  is there given by

$$p(u) = \frac{a^{m+1} \beta^{n+1}}{\exp\left(\frac{p^2}{a} + \frac{q^2}{\beta}\right)} \frac{1}{2\pi} \int_{-\infty}^{\infty} \frac{\exp \left\{ -iut + \frac{p^2}{a-it} + \frac{q^2}{\beta+it} \right\}}{(a-it)^{m+1} (\beta+it)^{n+1}} dt \quad (7)$$

Expanding the exponential line of this integrand, and reversing the processes of integration and summation, which is easily justified, we get  $p(u) =$

$$\frac{\alpha^{m+1} \beta^{n+1}}{\exp\left(\frac{p^2}{\alpha} + \frac{q^2}{\beta}\right)} \sum_{r=0}^{\infty} \sum_{s=0}^{\infty} \frac{\left(\frac{p^2}{\alpha}\right)^r \left(\frac{q^2}{\beta}\right)^s}{r! s!} \frac{1}{2\pi} \int_{-\infty}^{\infty} \frac{e^{-iut} dt}{(\alpha - it)^{m+r+1} (\beta + it)^{n+s+1}} \quad (8)$$

Putting  $\alpha - it = -\frac{z}{u}$  we have

$$\begin{aligned} & \frac{1}{2\pi} \int_{-\infty}^{\infty} \frac{e^{-iut} dt}{(\alpha - it)^{m+r+1} (\beta + it)^{n+s+1}} \\ &= \frac{e^{-\alpha u} u^{m+r}}{(\alpha + \beta)^{m+s+1}} \frac{1}{2\pi i} \int_{-u\beta - i\infty}^{-u\alpha + i\infty} \frac{e^{-z} dz}{(-z)^{m+r+1} \left\{1 + \frac{z}{u(\alpha + \beta)}\right\}^{n+s+1}} \\ &= \frac{e^{-\frac{1}{2}u(\alpha + \beta)} u^{\frac{1}{2}(m+n+r+s)}}{\Gamma(m+r+1) (\alpha + \beta)^{m+s+1}} W_{\frac{1}{2}(m-n+r-s), \frac{1}{2}(m+n+r+s+1)}\{u(\alpha + \beta)\} \quad (9) \end{aligned}$$

where  $W_{k,m}(z)$  is the Whittaker's confluent hypergeometric function.<sup>4</sup>

Thus we have

$$\begin{aligned} p(u) &= \alpha^{m+1} \beta^{n+1} (\alpha + \beta)^{-m-1} u^{\frac{1}{2}(m+n)} \exp\left\{-\frac{p^2}{\alpha} - \frac{q^2}{\beta} + \frac{1}{2}u(\alpha + \beta)\right\} \\ &\times \sum_{r=0}^{\infty} \sum_{s=0}^{\infty} \frac{\left(\frac{p^2}{\alpha}\right)^r \left(\frac{q^2}{\beta}\right)^s}{r! s! (m+r)!} u^{\frac{1}{2}(r+s)} W_{\frac{1}{2}(m-n+r-s), \frac{1}{2}(m+n+r+s+1)}\{u(\alpha + \beta)\} \quad (10) \end{aligned}$$

when  $\beta = \alpha$ ,  $n = m$  and  $q = p$  we see that

$$Q(t) = \left(\frac{\alpha^2}{\alpha^2 + t^2}\right)^{m+1} e^{-\frac{2p^2}{\alpha} + \frac{p^2}{(\alpha^2 + t^2)}} \quad (11)$$

and then  $p(u)$  is given by

$$p(u) = \frac{\sqrt{2}}{\pi} \left(\frac{\alpha}{2}\right)^{m+1} e^{-\frac{2p^2}{\alpha}} u^{m+\frac{1}{2}} \sum_{r=0}^{\infty} \frac{(p^2 u/\alpha)^r}{r! (m+r)!} K_{m+\frac{1}{2}}(ua) \quad (12)$$

as shown before.

### *The Distribution Law of the Quotient*

Let  $w = x/y$ , and  $v = \log w$ ,  $w > 0$  (13)

where  $x$  and  $y$  are given as before by (2) and (3). The characteristic function of the distribution law of  $v$  is given then by

$$Q'(t) = \int_0^{\infty} \int_0^{\infty} \left(\frac{x}{y}\right)^{it} f(x) g(y) dx dy \quad (14)$$



## Transliteration of the Sanskrit and Allied Alphabets

अ	आ	इ	ई	उ	ऊ	ऋ	ॠ	ऌ
a	ā	i	ī	u	ū	r̥	r̄	l̥
ए	ऐ	ओ	औ	ऋ	ॠ	ऌ	ॡ	ऴ
e	ai	o	au	m̐	~	h̐	h̐	h̐
क	ख	ग	घ	ङ	च	छ	ज	झ
k	kh	g	gh	ṅ	c	ch	j	jh
	ट	ठ	ड	ढ	ण	त	थ	
	ṭ	ṭh	ḍ	ḍh	ṇ	t	th	
त्	थ	द	ध	न	प	फ	ब	भ
t	th	d	dh	n	p	ph	b	bh
य	र	ल	व	श	ष	स	ह	ळ
y	r	l	v	ś	ṣ	s	h	ḷ

## Transliteration of the Arabic, Persian and Urdu Letters

ج	ث	ت	ط	پ	ب	و
dj or j	th or ṭ	t	ṭ	p	b	o or l
ر	ر	د	ذ	د	خ	ح
r	r	dh or ḍ	d	ḍ	kh or ḥ	ḥ
ز	ض	ص	ش	س	ث	ز
z	z, dz or ḍ	ṣ	sh or ṣ	s	zh or z	z
م	ل	گ	ک	ق	ف	غ
m	l	g	k	k or q	f	g or gh
ھ	پھ	بھ	ی	ھ	و	ن
th	ph	bh	y	h	w or v	n

Vowels:—

ا	ā
ی	ī
و	ū

Diphthongs:— ای ai او au wasla همزة hamza — or — or —

silent —h letter not pronounced —

نُونِ غَنَہ as in کہان, کہیں, کہوں = kahā, kahī, kahū,  
or kahān, kahīn, kahūn, respectively.



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